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# ENVIRONMENTAL ASSESSMENT BOARD



## ONTARIO HYDRO DEMAND/SUPPLY PLAN HEARINGS

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**VOLUME:** 68

**DATE:** Wednesday, October 2, 1991

**BEFORE:**

HON. MR. JUSTICE E. SAUNDERS Chairman

DR. G. CONNELL Member

MS. G. PATTERSON Member

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(i)

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I N D E X   o f   P R O C E E D I N G S

	<u>Page No.</u>
<u>KEITH DOUGLAS BROWN,</u> <u>PAUL FRANK VYROSTKO,</u> <u>JOHN KENNETH SNELSON; Resumed.</u>	12157
Cross-Examination by Mr. Shepherd	12186



L I S T   o f   E X H I B I T S

No.	Description	Page No.
323	Outline of IPPSO Panel cross-examination.	12176
324	"The Role of Independent Power", dated May 28, 1991.	12186
321.9	Interrogatory No. 5.14.33.	12267
321.10	Interrogatory No. 5.9.32.	12303
321.11	Interrogatory No. 5.14.216.	12341
321.12	Interrogatory No. 5.14.161.	12347
325	Document Precis entitled, "Excerpt from the transcript of the Ontario Energy Board, HR 16, dated July 15, 1987.	12356



L I S T   o f   U N D E R T A K I N G S

No.	Description	Page No.
322.1	Ontario Hydro undertakes to provide information about the 90 megawatt Boise Cascade contract.	12225
322.2	Ontario Hydro undertakes to provide a report on reliability data.	12272
322.3	Ontario Hydro undertakes to provide the details on the wind and solar projects and who owns them.	12317
322.4	Ontario Hydro undertakes to determine whether Ontario Hydro in the spring and summer of 1988 had discussions with the Department of Finance and advised the Department of Finance that there would be billions of dollars of projects utilizing Class 34 in the upcoming couple of years.	12356



1           ---Upon commencing at 10:05 a.m.

2           THE REGISTRAR: Please come to order.

3           This hearing is now in session. Be seated, please.

4           THE CHAIRMAN: Now, Mr. Starkman, do you  
5           have submissions you wish to make?

6           MR. STARKMAN: Thank you, Mr. Chairman.

7           I don't know, my microphone doesn't seem to be working.

8           THE CHAIRMAN: Mine is working. Is your  
9           microphone not working?

10           Thank you, Mr. Shepherd.

11           THE CHAIRMAN: It may be Mr. Shepherd or  
12           it may be Dr. Connell, I am not sure who.

13           MR. STARKMAN: Thank you, Dr. Connell.

14           DR. CONNELL: We share the credit.

15           MR. STARKMAN: I just wanted to address  
16           very briefly our concerns about Hydro's evidence  
17           yesterday concerning major supply NUGS and their desire  
18           to split out some part of the discussion with respect  
19           to those matters to Panel 8.

20           I guess our concern is to try and  
21           delineate before the cross-examination starts precisely  
22           what questions are going to be asked into what panel.  
23           And I guess part of the background is that Hydro did  
24           file a supplementary witness statement concerning the  
25           evidence of this panel on September the 20th and I

1       certainly didn't glean from that statement or anything  
2       else previously filed that they intended to split the  
3       evidence and that they had somehow taken out major  
4       supply NUGS. And I mean, I found it surprising and I  
5       don't know, maybe other people got a different message  
6       from it, but I guess this is a comment on the process  
7       that Hydro has been following. I don't know what the  
8       remedy is, but I can't let that pass.

9                   In terms of what we would like to see, we  
10      want to be clear that we will be able to cross-examine  
11      this panel on a number of issues and let me just set  
12      them out and then we can see where we are going.

13                  First of all, we would like to be able to  
14      cross-examine the panel on whether their explanation of  
15      the 1,000 megawatt increase is consistent with the  
16      statements made by the Chairman of Ontario Hydro.

17                  Secondly, and perhaps most important, we  
18      want to be able to ask questions of this panel with  
19      respect to the environmental constraints and guidelines  
20      used by these planners to screen NUGs and major NUGs.

21                  In other words, it is our understanding  
22      that whether or not something is or isn't a major NUG,  
23      it nevertheless goes through the non-utility generation  
24      panel. They make the decision as to whether or not a  
25      specific project is to go ahead. And we want to be

1 able to ask questions about the type of environmental  
2 screening they have to determine the acceptability of a  
3 particular project and we don't want to have a  
4 situation where they say, well, that is a major NUG;  
5 that is off in Panel 8. We want to be able to ask them  
6 because they are the people who are making the  
7 decisions.

8                   We would like to be able to ask questions  
9 with respect to the delineation between a major NUG and  
10 a preference NUG. And part of it comes from the  
11 evidence yesterday and I think it was a question from  
12 the Chairman, but basically, for example, if you have a  
13 half a kilowatt gas-fired CTU, is this a major supply  
14 NUG or I mean, how does it fit? Where is the dividing  
15 line?

16                   I think there was some discussion, they  
17 said they didn't know, but we would like to be able to  
18 probe into that.

19                   And lastly, we would like to be able to  
20 ask questions with respect to whether major supply NUGs  
21 are, in fact, similar to combined cycle CTUs which  
22 Hydro proposes in the balance of power. And they have  
23 said, these are similar to what we have proposed. That  
24 is why we want to treat them in Panel 8. We don't  
25 believe they are similar. We would like to be able to

1 ask questions about that.

2 So really, we are asking at this point to  
3 have a clear delineation of the type of questions that  
4 are permitted. If this panel is saying, we don't have  
5 enough technical expertise to talk about the workings  
6 of major supply NUGs and they want to leave that to  
7 Panel 8, then I guess we are satisfied with that, but  
8 we don't want to be foreclosed about asking these other  
9 sorts of questions. Those are our concerns.

10 THE CHAIRMAN: Mr. Greenspoon, do you  
11 have anything to add to that?

12 MR. GREENSPOON: Yes, Mr. Chairman, thank  
13 you. My concerns are similar but they relate to the  
14 alternatives. We are concerned with the moving of  
15 alternatives to Panel 8. It seems to us that Hydro has  
16 defined alternatives, as I understand it, as biomass,  
17 solar and wind and to classify those with fossil fuels  
18 doesn't have any natural sense to us. And as Mr.  
19 Starkman raised the concerns, we want to be able to  
20 question this panel on how they evaluate these  
21 alternatives in the NUG plan.

22 I have discussed this with Mr. Campbell  
23 and as long as it is clear that a non-answer by this  
24 panel can somehow be referenced when Mr. Campbell  
25 brings the right expert forward is satisfactory to

1           Northwatch, but that is our concern.

2           And as well, I think as Mr. Starkman  
3        said, well, I think he probably meant a half a megawatt  
4        CTU. We are concerned about that. Where is the  
5        cut-off line between a major supply and an alternative?

6           And the reason I should put on the record  
7        is I understand about 70 per cent of the NUGs are in  
8        Northern Ontario, so that is why we are concerned.

9           THE CHAIRMAN: Of the existing ones or  
10       the proposed ones?

11           MR. GREENSPOON: Yes, sir, existing.

12           THE CHAIRMAN: Now, before I ask Mr.  
13        Campbell, is there anyone else who has got any concerns  
14       about the delineation?

15           Mr. Campbell, which one of these items --  
16       I mean, do any of these give you any problems; if so,  
17       which ones and to what extent?

18           MR. B. CAMPBELL: I don't think any of  
19       these give us any, problems, Mr. Chairman, with respect  
20       to the explanation of 1,000 megawatts and whether it is  
21       consistent with the chairman's statement. That is  
22       clearly a matter that this panel can speak to.

23           The consideration of environmental  
24       constraints the panel has addressed to some degree in  
25       its evidence in-chief in that it requires compliance

1       with regulations and then further exploration of that  
2       evidence is obviously appropriate.

3                  The delineation between major and  
4       preferred, I believe the panel can speak to as they did  
5       yesterday. There was some discussion about having to  
6       do some thinking about where the efficiency breakoff  
7       would be for purposes of that classification.

8                  And the treatment for planning purposes,  
9       I think that is quite appropriate to explore with this  
10      panel, although as the panel was quite frank to say  
11      yesterday, all of the details of that are not yet  
12      worked out.

13                 With respect to major supply NUGs being  
14      the same as CTU-CCs, again, I think that question can  
15      be explored to some degree with this panel. It has  
16      much to do with -- in terms of this panel, Mr. Snelson,  
17      I think, can speak to the planning considerations that  
18      are involved in those choices. So, I think that one, I  
19      believe, can be dealt with.

20                 There may be some areas where we would  
21      indicate where you have really got to wait for the  
22      Panel 8 evidence to deal with that because it is there  
23      that the expertise on that particular technology was  
24      always intended to be called.

25                 The Board will recall that Panel 8 is the

1 fossil panel and it looks at a wide range of fossil  
2 options as the plan looked at a wide range of fossil  
3 options, narrowed those down to the ones that are  
4 included in the plan. And the focus on those types of  
5 technologies has always been on Panel 8.

6 We do have a situation where because of  
7 the success of NUG efforts over the last year combined  
8 with low natural gas prices, there has been an  
9 increasing emphasis in these recent projects as you  
10 have heard on similar technologies being implemented by  
11 NUGs.

12 But I think we have been quite clear all  
13 along that that basic technology in terms of the nature  
14 of the technology and its environmental effects would  
15 be dealt with in Panel 8. And there is a statement  
16 explicitly to that effect in paragraph 9 of the  
17 supplementary witness statement that we filed, where we  
18 speak about these projects being similar to Hydro's  
19 own proposal for major supply i.e. CTU-CC, combustion  
20 turbine units-combined cycle and would be evaluated on  
21 the same basis in accordance with system need, the  
22 technologies involved and the environmental impacts  
23 will be discussed in the Panel 8. So, we have been  
24 quite clear about that from the beginning. I don't  
25 anticipate though any major problems with the matters

1       that Mr. Starkman has raised.

2                   With respect to alternative energy  
3       technologies, I would like to record that if there has  
4       been any vacillation as to where this was going to be  
5       dealt with, it has been as between Panel 7 and 8, never  
6       this panel. There is transcript references in April,  
7       May, June, July, all of which speak to alternative  
8       technologies being dealt with.

9                   The thought was, as Panel 7, we have  
10      taken a look at that, given the matters that have to be  
11      dealt with at Panel 7. I raised this matter on scoping  
12      meetings with the parties previously. And because some  
13      of the technologies involved do involve combustion or  
14      biomass burning for electricity generation and there  
15      would be an overlap on the air emissions and related  
16      issues, we have taken a decision to move that to Panel  
17      8, but that is the only change.

18      [10:15 a.m.]

19                   It's never been contemplated. We have  
20      always spoke of it as being in a later panel than Panel  
21      5. As I say, in my submission that's been clear  
22      throughout.

23                   In terms of how the NUG division in its  
24      business intends to deal with the incorporation of some  
25      of these alternative technologies and the evidence that

1       Mr. Brown has given that certainly for the post-2000  
2       period he expects to be including some provision for  
3       alternative technologies, those matters can be explored  
4       in cross-examination.

5                   Again, I don't anticipate a big problem  
6       based on what my friends have said, and I think we are  
7       quite prepared to proceed on that basis.

8                   THE CHAIRMAN: Well, I don't detect that  
9       there is a major problem here. It seems to me quite  
10      relevant to this panel that the environmental  
11      considerations that are taken into account to the  
12      extent they are or are not is a relevant consideration  
13      for this panel. The major NUG supply is a new concept,  
14      but cogeneration is not a new concept, and when we get  
15      to the physical aspects of the various technologies, it  
16      may turn out to be appropriate to defer those to  
17      another panel as it comes up. But I don't really see  
18      much of a problem. We seem to be in general agreement  
19      and we may have to deal with specific issues as we go  
20      along, but I think we can now proceed.

21                   MR. B. CAMPBELL: Thank you, Mr.  
22                   Chairman.

23                   THE CHAIRMAN: Before Mr. Shepherd takes  
24      over, Dr. Connell has a couple of questions.  
25

1                   KEITH DOUGLAS BROWN,  
2                   PAUL FRANK VYROSTKO,  
3                   JOHN KENNETH SNELSON; Resumed.

4                   DR. CONNELL: Panel, I would like to try  
5                   to clear up my understanding of some of the issues  
6                   surrounding gas prices. Perhaps I could begin by just  
7                   citing three points in the transcript yesterday at  
8                   which this issue came up.

9                   If you have your transcripts handy, the  
10                  first is page 12080, beginning at line 12, this is Mr.  
11                  Vyrostko, in the middle of that paragraph:

12                  "As a result of the very low gas  
13                  prices to date, in essence, these 1,000  
14                  megawatts of projects were projects that  
15                  were not anticipated in the 1990 NUG  
16                  plan."

17                  12097, essentially the same point in  
18                  response to a question from the Chair, Mr. Brown said  
19                  at line 25 and continuing on the next page:

20                  "A decrease in the gas price has made  
21                  these purchases viable." The same 1,000 megawatt  
22                  reference.

23                  And then on page 12127 and 12128, this  
24                  refers to Exhibit 320, page 17, which I hope you have  
25                  in front of you. The paragraph beginning at the bottom  
                      at page 12127 reads:

1                   "Of interest on this slide is first at  
2                   the beginning in the year 1990 you see  
3                   the steady decrease in the starting  
4                   prices of gas, which we have been seeing  
5                   over the last couple of years, the  
6                   decrease which is making the natural gas  
7                   projects more viable."

8                   And continuing in the next paragraph:

9                   "And also shown in this slide is the  
10                  increase from the 1989 NUG plan forecast  
11                  to the one that was used in the 1990.  
12                  This change resulted in the estimate of  
13                  economic potential decreasing from 5,000  
14                  megawatts from the 1989 NUG plan to only  
15                  1,200 megawatts in the 1990 NUG plan."

16                  I wonder if I could first just ask Mr.  
17                  Brown to clarify that reference to the economic  
18                  potential. Can I find that 1200 megawatts on page 11  
19                  of Exhibit 320, Mr. Brown? That's the NUG plan  
20                  summary.

21                  MR. BROWN: That would be the 1250, the  
22                  year 2000 attainable.

23                  DR. CONNELL: Yes, okay. So, the 1,200,  
24                  if we are going to make it three significant figures,  
25                  it would be 1,250 then.

1                   MR. BROWN: ... That's correct.

2                   DR. CONNELL: I understand, okay.

3                   Referring back to Exhibit 320, page 17, I  
4 would like to ask the source of these gas forecasts.

5                   Are these generated within Hydro?

6                   MR. BROWN: The forecast used in the 1990  
7 NUG plan and the one proposed for the 1991 NUG plan are  
8 produced by Ontario Hydro, as discussed in Panel No. 1.

9                   The forecast that used in the '89 NUG  
10 plan was generated by our division and was based on gas  
11 contracts typical of projects going in service in '89.

12                  DR. CONNELL: And have you compared these  
13 with other people's gas forecasts, gas price forecasts?

14                  MR. BROWN: I think that will be  
15 discussed in a further panel.

16                  MR. SNELSON: Perhaps I could help here,  
17 Dr. Connell, and that is that the documentation of the  
18 forecast that was included in the most recent Hydro  
19 forecast of gas prices is in Exhibit 14, which is the  
20 energy price trends report, November 1990. I believe  
21 that's the most recent one.

22                  DR. CONNELL: Do the NUG proponents have  
23 access to these forecasts? I presume they do.

24                  MR. VYROSTKO: Yes, they do.

25                  MR. BROWN: The most recent one is on

1 display in our front hallway of the NUG division.

2 DR. CONNELL: So they are fully aware, if  
3 I compare '89 to '91, they are fully aware that there  
4 is a crossover coming in 1996 if your forecasts are  
5 fulfilled.

6 MR. BROWN: I don't know if anybody has  
7 compared the two.

8 DR. CONNELL: I think what is puzzling me  
9 is why, according to your testimony yesterday, the  
10 present gas prices would be so influential when the  
11 proponents are presumably contemplating projects which  
12 will endure for ten, fifteen, twenty years or more.

13 MR. VYROSTKO: Perhaps maybe I can talk a  
14 little bit about that.

15 When we first got into business back  
16 about two years ago with natural gas pricing, the  
17 deregulation of the gas industry had created an  
18 expectation that a lot was going to happen with regard  
19 to gas pricing, and throughout the '88/89 period, the  
20 expectation was that the gas price where it was in '89  
21 was going to escalate significantly, and that tended to  
22 then put a damper on the activities in our business.  
23 But deregulation, in fact, hasn't done that. In fact,  
24 if anything, we have seen starting in 1990 and carrying  
25 on to 1991, gas prices have, in fact, decreased, and I

1 think -- I can't speak to all the reasons behind that,  
2 but I think competition clearly is bringing the price  
3 down. I think the overall economic situation is  
4 tending to stop some of the sales and therefore they  
5 are having to reduce their prices.

6 So, the contracts that we have been  
7 seeing with the producers and with the developers have  
8 in fact -- the starting price has come down over the  
9 last two years.

10 [10:25 a.m.]

11 DR. CONNELL: So may I infer from that,  
12 Mr. Vyrosto, that your 1989 gas price forecast was not  
13 credible with the proponent, they were anticipating  
14 much higher prices than Hydro was?

15 MR. VYROSTKO: Over the long term?

16 DR. CONNELL: Yes.

17 MR. VYROSTKO: That's correct. That was  
18 one of the issues that we had to work with the industry  
19 on and that was to try to bring a balance between what  
20 they were expecting over the long term and, sort of,  
21 what we were expecting because the gas industry was  
22 really looking for, what I think they called at that  
23 time, the hockey stick phenomena, sort of flat prices  
24 in the short term and then a tremendous rise in  
25 pricing.

1                   So when we first forecasted we were out  
2 of step with them in terms of that projection over the  
3 long term.

4                   DR. CONNELL: So if they had believed  
5 your '89 forecasts they might have been much more  
6 enthusiastic much earlier?

7                   MR. VYROSTKO: That's correct.

8                   DR. CONNELL: I would like to turn, if I  
9 may, to some testimony from Monday, the 30th. This is  
10 Volume 66 from Panel 4. If you have that document  
11 accessible.

12                  MR. B. CAMPBELL: We don't have it here.

13                  DR. CONNELL: Perhaps I can just read  
14 into the transcript the relevant section.

15                  This concerns Exhibit 309, which is the  
16 incremental system values of power and energy, August,  
17 1991. I know this is a document you're very familiar  
18 with, Mr. Shalaby.

19                  THE CHAIRMAN: Mr. Snelson.

20                  DR. CONNELL: Mr. Snelson.

21                  MR. SNELSON: Mr. Shalaby is also very  
22 familiar with it.

23                  DR. CONNELL: And also Exhibit 175, which  
24 was its predecessor dated February 21st, '91.

25                  On page 11937 Mr. Shalaby said, in a

1 response to a question that I put to him concerning the  
2 changes in the system incremental values from February  
3 to August:

4 "One of the important things that  
5 occurred in the August '91 is that there  
6 was a lower load forecast in the early  
7 90s. So the period up to '95, '96,  
8 there was a lower load forecast than we  
9 projected before. That has the impact of  
10 lowering the incremental values in the  
11 early years, '91 to '95, '96."

12 And I'm not sure if you want to look at  
13 the values, but let's just take a typical one from  
14 Exhibit 309. Do you have 309 with you?

15 MR. SNELSON: Yes, I do.

16 DR. CONNELL: Let's take 1995, winter  
17 peak, for example, thirty 1991 dollars per  
18 megawatthours at the generator station bus, you can  
19 tell me if I'm --

20 MR. SNELSON: We are looking at the  
21 project appraisal values?

22 DR. CONNELL: Yes, in Exhibit 309.

23 MR. SNELSON: Yes.

24 DR. CONNELL: 1995 winter peak, mills per  
25 kilowatthour, which is presumably the same, 48.8 mills

1 per kilowatthour.

2 So there has indeed been a very  
3 significant change and, obviously, it would require a  
4 great deal of detail to understand how those changes  
5 would impact on the thinking of a NUG proponent.

6 But I wonder if you can give me some  
7 sense of how that factor is affecting them and whether  
8 that, in fact, to some extent offsets the impact of gas  
9 prices?

10 MR. SNELSON: I can comment from a  
11 planning perspective, and if I can also refer you to  
12 309, then pages 8 and 9 have figures showing the  
13 comparison of the February, '91 and what is shown as  
14 July 91, but which is the 309 numbers, and there are  
15 two figures; one for planning values, one for project  
16 appraisal values, and that shows the effect that Mr.  
17 Shalaby was talking about of the values when you  
18 combine together all of the four time periods for  
19 energy and the capacity values for a reasonably high  
20 capacity factor, that shows the scale of the difference  
21 that one is looking at.

22 So, the message that these values should  
23 be sending is that there is a lesser need in the early  
24 1990s and a greater need around, on a planning basis,  
25 year 2000 and later and on a project appraisal value

1 basis around '96 or '97 and later, somewhere in that  
2 area.

3 As regards what a NUG proponent actually  
4 does with these is that because the avoided cost is  
5 evaluated over the whole contract period, then that may  
6 or may not reflect into a significant change in the  
7 rate that is offered to the non-utility generator.

8 He will be offered a rate which will be  
9 calculated by Mr. Vyrostko's division based on the  
10 present value of the avoided cost over the whole  
11 contract period. So if some years are down and some  
12 years are up, then that may not reflect as a very big  
13 change to the non-utility generator. And this should  
14 reflect an improving value to projects that are coming  
15 in in the mid-1990s and later, and perhaps somewhat  
16 lesser value to projects that are coming in in the  
17 early 1990s.

18 DR. CONNELL: It did strike me as curious  
19 that the cross-over in the figure you've drawn our  
20 attention to on page 9 did cross-over just about the  
21 point where you get the cross-over in the natural gas  
22 forecast between the '89 forecast and '91 forecast.

23 MR. SNELSON: I would expect that to be a  
24 coincidence not of particular significance.

25 DR. CONNELL: Yes. But what Mr. Vyrostko

1 has said is that in the mind of the typical NUG  
2 proponent that gas price cross-over really didn't  
3 happen because they believe the 1989 outlook was toward  
4 much higher prices.

5 MR. VYROSTKO: That's correct.

6 DR. CONNELL: I would just like to  
7 proceed a little farther in the transcript I cited,  
8 page 11937, quoting again from Mr. Shalaby:

9 "The second major development that was  
10 included in that more recent exhibit...",  
11 referencing Exhibit 309 again,

12 "...is that it includes the effect of the  
13 nuclear moratorium. And what that does  
14 is introduces into our plans fossil-fired  
15 generation, a combined cycle plant and an  
16 integrated gasification combined cycle  
17 plant, a natural gas-fired and coal-fired  
18 plant in the period 2003 to 2008. So, it  
19 is a fossil-fired plant where in the  
20 previous documents there were  
21 nuclear-generated electricity."

22 Now, what I would like to put to you here  
23 is: Is that change significant in your current project  
24 appraisal costs and in your relationships to the NUG  
25 proponents, or is that too far distant to have much

1 impact on current negotiation?

2                   MR. SNELSON: Again, from a planning  
3 viewpoint, it affects the system incremental costs for  
4 the period in the middle of the first decade of the  
5 next century, which is about the time that Mr. Shalaby  
6 indicated, and that will have some influence in  
7 proportion to the number of years affected and the  
8 degree of the effect or the avoided cost of a twenty  
9 year contract that is coming into service in '95, say,  
10 and lasting to 2015.

11                  So, it will have some influence on the  
12 avoided cost that is calculated. But, again, because  
13 it's averaged with the other years, then as a single  
14 influence it will be somewhat diluted by the other  
15 years over which it is averaged.

16 [10:37 a.m.]

17                  DR. CONNELL: Is it clear yet whether the  
18 natural gas-fired plant cited by Mr. Shalaby is going  
19 to be used in a base load mode or not?

20                  MR. SNELSON: I believe that the  
21 assumption that would have been used is that it would  
22 have been used for either peaking or intermediate use  
23 but not base load use.

24                  DR. CONNELL: Where as the --

25                  MR. SNELSON: Based on system economics

1 and fuel cost.

2 DR. CONNELL: Whereas, the integrated  
3 gasification combined cycle plant, that would be a base  
4 load unit presumably?

5 MR. SNELSON: It would be loaded much  
6 heavier because of its lower fuel cost than the  
7 gas-fired plant, but it would be loaded in the loading  
8 order after our nuclear plants which have lower fuel  
9 costs than a coal-fired plant.

10 DR. CONNELL: Yes.

11 MR. SNELSON: So, it would be somewhere  
12 towards the base load end of operation

13 DR. CONNELL: Yes. So, the high capacity  
14 factor NUGs that you cited would, in effect, be  
15 competing against some mix of nuclear and coal-fired  
16 plants for the most part?

17 MR. SNELSON: For their energy  
18 contribution, yes; for their peaking contribution with  
19 whatever is the peaking option. So it is a blend of  
20 the various options.

21 DR. CONNELL: Thank you very much.

22 THE CHAIRMAN: Just a moment, Mr.  
23 Shepherd. Ms. Patterson has some questions.

24 MS. PATTERSON: I just wanted to  
25 follow-up on Dr. Connell's question about gas prices.

1                   And did I understand correctly that the  
2 reason that gas-fired plants seem more probable now is  
3 that Hydro and the proponents are closer together in  
4 their estimates about what gas prices will be in the  
5 future even if they tend to be higher, so that Hydro is  
6 willing to pay on the basis of that gas price forecast?

7                   MR. VYROSTKO: As Mr. Snelson just  
8 pointed out, we pretty well determine the price that we  
9 pay for a project based on the project appraisal  
10 avoided costs that are provided to us by system  
11 planning.

12                  And then we take what that value of that  
13 project is over the twenty years if it is a twenty year  
14 project, calculate what the total value of that is and  
15 bring it down to present value, which then reflects the  
16 individual avoided costs of each of those years.

17                  The present value is the starting rate.  
18 The total twenty year package is the amount of money  
19 that we can afford to pay for that project within  
20 avoided cost.

21                  And now, the challenge for ourselves and  
22 the developer and the gas industry is then to put a  
23 project together that takes gas pricing, however the  
24 gas industry sees it and however they want to translate  
25 that to the developer, and can put that pricing package

1       within the overall umbrella of the avoided cost.

2                  You can start with a higher price at the  
3       front end with a lower escalation or you can start with  
4       a lower price at the front end with a higher escalation  
5       or any combination thereof.

6                  The reason for our gas forecast for us is  
7       the gas forecast that Hydro produces gives us the range  
8       of escalation that we can accept within the overall  
9       project avoided cost.

10                 But if the gas industry or the developer  
11       can do something differently and still stay within  
12       that, then the gas pricing from that perspective is not  
13       related to the avoided cost.

14                 MS. PATTERSON: Thank you. I have some  
15       questions on the witness statement as well. And I  
16       guess before that, in terms of the 1,000 extra  
17       megawatts and Exhibit 320, the evidence was that the  
18       1,000 was made up of - on page 19 of Exhibit 320 - 650  
19       megawatts from cogeneration under industrial and gas  
20       compressor stations and 350 from fossil fuel, major  
21       supply.

22                 Can you break down that a bit more? In  
23       terms of the 350 megawatts, is that a single major  
24       supply option?

25                 MR. VYROSTKO: Yes, it is.

1                   MS. PATTERSON: And in terms of the  
2                   cogeneration megawatts --

3                   MR. BROWN: 240 is in the combined cycle  
4                   category and the remainder in the industrial  
5                   cogeneration category.

6                   MS. PATTERSON: The reason that you are  
7                   including only 350 megawatts in the NUG plan for major  
8                   supply is that because basically, any NUG, any major  
9                   supply NUGs would replace major supply that Hydro  
10                  already has in its plan, so it would be double counting  
11                  if you included potential further major supply from  
12                  NUGs?

13                  MR. BROWN: It is included in the plan  
14                  because in the 1991 plan, as this project is expected  
15                  to be committed, and as I mentioned yesterday, as these  
16                  projects are committed, they will be in the NUG plan  
17                  and we will be accounting for that in our numbers. So  
18                  it is part of the 1,000 and it is one of the reasons  
19                  why it went to 3100.

20                  There is still no forecast of additional  
21                  above that. It is a particular site that we believe  
22                  will be committed by year end and will be included in  
23                  the '91 NUG plan.

24                  MS. PATTERSON: But in the normal  
25                  planning process, you would include what you thought

would occur in the future and you are not doing that with these major supply NUGs. You are just putting them in as you have them committed.

MR. SNELSON: Perhaps I can speak to that. The intention is that through a variety of planning processes, including this one, we will be considering the need for major supply options from combustion turbine and combine cycle generation; and that implementing that technology through non-utility generation is one of the options that is available for implementing that, and that option is still open and is not being closed.

Clearly, when a specific plan is made either to implement that option with Ontario Hydro generation or with non-utility generation, then it will be accounted for in the planning process.

And the way in which Mr. Brown has indicated it is that we will account for that by including it in the NUG plan at that time, at the time that it is a specific plan that is intended to go ahead.

MS. PATTERSON: I just have a couple of other questions with respect to the witness statement. Paragraphs 7 and 16 have figures that seem to be related to the same reply. The first paragraph, 7,

1 says:

2                   The NUG industry has 73 committed and  
3                   in-service projects totalling 718  
4                   megawatts.

5                   And I believe that has been changed by  
6                   page 2 of Exhibit 320, which has 74 projects and 730  
7                   megawatts.

8                   MR. BROWN: Since the time this was  
9                   prepared, one project has been committed and added to  
10                  the list representing the, I believe, 13 megawatt  
11                  difference. It is a hydraulic project.

12                  MS. PATTERSON: And then in paragraph 16,  
13                  you say that you have 68 megawatts of committed NUGs,  
14                  over 1,000 megawatts of NUGs which are on the verge of  
15                  being committed and about 700 megawatt of proposals  
16                  under serious negotiations.

17                  So, does this figure not include the  
18                  earlier 730?

19                  MR. BROWN: The 68 megawatts is included  
20                  in the 731 and the 1,000 would be in addition to that.

21                  MS. PATTERSON: And the 700 in addition  
22                  is under negotiation?

23                  MR. BROWN: Yes, those are still under  
24                  negotiations.

25                  MS. PATTERSON: Thank you.

1                   THE CHAIRMAN: Mr. Shepherd?

2                   MR. SHEPHERD: Thank you, Mr. Chairman.

3       I have quite a number of preliminary odds and ends to  
4       deal with. Bear with me, please.

5                   My clients have accepted the  
6       responsibility of being the lead intervenors on this  
7       panel and because of that, we hope to deal with all of  
8       the key issues relating to non-utility generation. We  
9       have had discussions with the other intervenors and  
10      many of them are relying on us to cover the ground as  
11      it were.

12                  Some of these issues, in fact, have been  
13      issues that have been the subject of intense debate and  
14      disagreement over the last couple of years.

15                  However, we have learned from our Panel 3 experience  
16      and we now plan for four days of cross-examination of  
17      these witnesses. And I think it is fair to say that  
18      that is a pretty reliable estimate from what I can see  
19      now anyway.

20                  As with other panels, we have prepared an  
21      outline of our cross-examination to assist you. That  
22      has been filed with the Registrar and I understand you  
23      have copies. I don't know whether it has an exhibit  
24      number yet. That is this one here, outline, IPPSO,  
25      Panel 5 cross-examination, the one page which was

1 delivered this morning, I believe.

2 THE REGISTRAR: Exhibit No. 322.

3 MR. SHEPHERD: 322?

4 THE CHAIRMAN: What is the undertaking  
5 exhibit?

6 MR. SHEPHERD: I thought that was the  
7 undertaking.

8 THE CHAIRMAN: What is the undertaking  
9 exhibit number?

10 MR. CAMPBELL: 323.

11 THE CHAIRMAN: This will be 323 then.

12 MR. SHEPHERD: Okay, 323.

13 THE REGISTRAR: The undertaking number is  
14 321.9.

15 THE CHAIRMAN: No, no. That is the  
16 interrogatories number.

17 THE REGISTRAR: Oh, I am sorry.

18 THE CHAIRMAN: We haven't had any  
19 undertakings yet.

20 MR. B. CAMPBELL: 322 is the  
21 undertakings.

22 THE CHAIRMAN: But there's no  
23 undertakings entered into it yet.

24 MR. B. CAMPBELL: Not yet.

25 THE CHAIRMAN: No.

1                   MR. SHEPHERD: We will try to rectify  
2 that shortly, Mr. Chairman.

3                   THE CHAIRMAN: Just so we are all on  
4 track, the outline of the IPPSO panel and  
5 cross-examination is No. 323.

6                   ---EXHIBIT NO. 323. Outline of the IPPSO panel and  
7                   cross-examination.

8                   MR. SHEPHERD: Thank you, Mr. Chairman.  
9                   We do expect that there is a significant likelihood  
10                  that we will have to depart from this outline. It is  
11                  true partly because of the recent changes that we have  
12                  seen, the supplementary witness statement, the evidence  
13                  yesterday, which have thrown us into a bit of a tizzy  
14                  and we may have to dance a bit to keep up with it. And  
15                  it is also partly true because, as I will speak to in a  
16                  second, the issue of confidential information may come  
17                  up and may throw everything off.

18                  On the issue of confidentiality, perhaps  
19                  I can just explain where we are right now so that  
20                  nothing comes as a surprise. We have spoken to Ontario  
21                  Hydro about it and we have advised the Board formally  
22                  that we have not been able to come to an agreement with  
23                  Ontario Hydro on what information should be released or  
24                  not.

25                  What we have said is that rather than

1 proceed with some sort of motion on it in advance, we  
2 will be proceeding with our cross-examination and  
3 seeing just what kind of barrier it presents, if at  
4 all.

5 I should advise you that we don't intend  
6 the first time we hit confidentiality to simply jump up  
7 and say, okay, let's have a motion. Our intention is  
8 to see whether it is a barrier in a number of areas and  
9 I would say several rather than a couple.

10 We have identified in our  
11 cross-examination questions those areas where we know  
12 it will come up and we have made a determination that  
13 if those are the only areas it comes up, we will not be  
14 proceeding with a motion on that point.

15 However, if it comes up in other areas  
16 where we hope it won't, then we will have to make an  
17 assessment at the time.

18 [10:50 a.m.]

19 In that circumstance we have advised Mr.  
20 Campbell that we would anticipate breaking off from  
21 that area of cross-examination, asking for a motion  
22 returnable the next morning, which I understand Mr.  
23 Campbell is in agreement with.

24 MR. B. CAMPBELL: No, no.

25 MR. SHEPHERD: Sorry?

1                   MR. B. CAMPBELL: I will let you finish.

2                   MR. SHEPHERD: I will let you clarify it  
3 in a minute.

4                   And proceeding with both oral and written  
5 submissions on the point.

6                   I will also tell you that - and I have  
7 told Mr. Campbell this - at the point where we expect  
8 that this is going to come up, if it does, and I should  
9 say we hope it does not, we will be providing him with  
10 an early draft of our written legal submissions so he  
11 isn't taken by surprise on short notice.

12                  Maybe before I get to things, Mr.  
13 Campbell has some comments on confidentiality.

14                  THE CHAIRMAN: Let's just put a scenario  
15 in, supposing this happened at 11:15 this morning, I  
16 take it we wouldn't then suspend the operation until  
17 tomorrow morning, you would go on to some other area of  
18 your cross-examination?

19                  MR. SHEPHERD: That's the intent, that I  
20 will move on to another subject and we will deal with  
21 the first one after we have thought about it.

22                  THE CHAIRMAN: All right. Is that the  
23 sum of what you want to talk about on this subject?

24                  MR. SHEPHERD: On that subject, yes.

25                  THE CHAIRMAN: Mr. Campbell?

1                   MR. B. CAMPBELL: The only reason I demur  
2 slightly is on the base of returnable the next morning.  
3 Mr. Shepherd has advised me that if he has to pursue  
4 this matter in a serious way, it will be, as he  
5 described, by written and oral submissions. In that  
6 situation, he also indicated to me that he would be  
7 relying extensively on case law, in those circumstances  
8 we would certainly not be in a position to respond to  
9 all of that the next morning. Nor I think is it, in  
10 the end, an appropriate way to proceed.

11                  A considerable amount of the kind of  
12 discussion that Mr. Shepherd and I have had around this  
13 matter involves information that is provided to Ontario  
14 Hydro on a confidential basis by NUG proponents. And  
15 it's certainly I think - although I would want to talk  
16 to in particular Mr. Vyrostko about this, but I have a  
17 notice concern about this as well in that if there is  
18 information being sought with respect to particular  
19 proponents' projects, they are entitled to full and  
20 adequate notice to come and participate in that debate.  
21 That is a concern that I think has to be dealt with in  
22 this context as well.

23                  We would certainly want to make sure that  
24 the people whose projects are actually involved in this  
25 kind of matter themselves were advised of the

1       possibility of such an order being requested.

2                   So, I think that my caveat is on the  
3                   doing it the next morning side, not on the general  
4                   approach, I have no particular argument with that. But  
5                   it has occurred to me in thinking about this matter,  
6                   that there is another interest here that is pretty  
7                   directly affected.

8       ---Off the record discussion.

9                   MR. B. CAMPBELL: Mr. Chairman, the other  
10                  thing that I will raise if this happens is that I may  
11                  well have to speak, have the Board's or the parties'  
12                  permission to speak to Mr. Vyroostko on these matters if  
13                  it's going to be argued in the middle of  
14                  cross-examination. I need to obtain instructions with  
15                  respect to the specific requests that are being made.

16                  Mr. Shepherd and I have talked about this  
17                  in a number of areas, but it's when the particular  
18                  questions arises, I think if it is going to motion I am  
19                  going to have to be able to speak to Mr. Vyroostko and  
20                  Mr. Brown in order to obtain instructions on the  
21                  matter.

22                  Again, I just record that because I think  
23                  as a practical matter there is no other place I can get  
24                  instructions.

25                  THE CHAIRMAN: When you say it can't be

1           the next morning, when do you say this should be?

2                           MR. B. CAMPBELL: I think I am in no  
3                           position to be able to suggest that until the  
4                           particular circumstances arise. We are talking about  
5                           individual developers and I think the question is as  
6                           much theirs as it is Ontario Hydro's to make  
7                           submissions on that matter.

8                           I raise a concern that we are talking  
9                           about people's business here and they are entitled to  
10                          appropriate notice.

11                         THE CHAIRMAN: I understand your point.

12                         MR. B. CAMPBELL: I can't see them being  
13                          in a position to respond to that kind of a motion about  
14                          their own businesses without at least a week.

15                         THE CHAIRMAN: You don't have to answer  
16                          this question if you don't want to, but in your  
17                          discussions with Mr. Shepherd, have you identified who  
18                          the third parties are and have they been in any way  
19                          communicated with so that they themselves are familiar  
20                          with the situation?

21                         MR. B. CAMPBELL: We did suggest to Mr.  
22                          Shepherd that if he needed information on particular  
23                          projects, that it was of course open to him to approach  
24                          those project proponents.

25                         THE CHAIRMAN: That's what Mr. Howard

1 said when the this came up last time in Panel 3, I  
2 think it was.

3 MR. B. CAMPBELL: We do not see it as our  
4 role to do so. We have a very clear understanding as  
5 to the basis on which certain information is provided  
6 to Ontario Hydro and it's provided on the understanding  
7 that it would be kept confidential.

8 THE CHAIRMAN: I suppose it may be - and  
9 I don't like talking about things in general - but it  
10 may be that the very identity of the third parties is  
11 confidential.

12 MR. B. CAMPBELL: I think that's not such  
13 a problem once a project is committed. It's up to the  
14 point of commitment, yes that can be a concern.

15 THE CHAIRMAN: Well, in your scheme of  
16 things, do you have any reasonable of anticipation of  
17 when this issue may be tripped over?

18 MR. SHEPHERD: Mr. Chairman, it could be  
19 tripped over as early as this afternoon. But I would  
20 expect that if it happens, it won't happen until Monday  
21 morning, just from where I am and what I am going  
22 after.

23 THE CHAIRMAN: It's really very difficult  
24 to deal with these issues in a sort of an abstract way.  
25 I think we have to wait to see what happens and deal

1 with it at that time.

2 MR. SHEPHERD: I wonder if I could make  
3 just a couple of comments on what Mr. Campbell said. I  
4 won't take but a minute.

5 The first is, I can proceed with the  
6 cross-examination after running into that problem for a  
7 few hours. I don't think I can proceed for several  
8 days, nor do I think intervenors can follow me with  
9 cross-examination before the issue is resolved if it  
10 appears to be serious.

11 Secondly, Mr. Campbell talks about  
12 notice, I think he probably forgets who I act for, No.  
13 1, and the fact that my client has notice, and I guess  
14 all of the members of my client have notice which  
15 probably includes virtually everybody we are talking  
16 about, and secondly every party to this hearing already  
17 has notice of this. And thirdly Mr. Campbell has known  
18 about this for weeks and they were quite in a position  
19 to provide all these people with notice that it was an  
20 issue if they wanted to. I think it doesn't lie in his  
21 mouth now to say, oh, surprise.

22 MR. B. CAMPBELL: It's not my motion.

23 THE CHAIRMAN: We don't need to get into  
24 a debate about that, there was a number of factors  
25 involved with that. Let's go on with the

1           cross-examination.

2                   MR. SHEPHERD: One other preliminary  
3           comment. In the past we have tabled all of our  
4           exhibits up front, with greater or lesser success. We  
5           are not going to do that this time, partly because they  
6           are not all ready yet, but more because we are not yet  
7           sure which ones we are going to have to end up using  
8           and so we thought it would be much more convenient  
9           rather than having to rip things out of a binder, to  
10          table them as they are needed.

11                 None of them are of lengthy enough to be  
12          a problem that way. They are all one page or two  
13          pages, and as soon as we know they will be filed, we  
14          will get them in so that the witnesses have a chance to  
15          read them.

16                 The issue is not surprise here; it is  
17          simply convenience for everybody.

18                 Finally, I would like to introduce Dr.  
19          Jan Hamrin who is seated beside me. Dr. Hamrin is  
20          IPPSO's main expert on policy issues relating to  
21          independent power. As the founder of the Independent  
22          Energy Producers in California and of the National  
23          Independent Energy Producers covering all of the U.S.,  
24          she has had more involvement in independent power  
25          policy than any other single individual in the world.

1       Her expertise has often been recognized, and in Ontario  
2       she was on the Electricity Planning Technical Advisory  
3       Panel which has been referred to a number of times in  
4       this hearing.

5                   I couldn't resist the CV.

6                   MR. SHEPHERD: I would like to start,  
7       witnesses, by looking at the benefits of independent  
8       power.

9                   I guess I should say at the outset that  
10      all of my questions in this cross-examination are  
11      intended to be directed to Mr. Vyrostko, so unless I  
12      specifically state otherwise which I will in a couple  
13      of cases where issues come up, I would appreciate it if  
14      you would deal with these questions as being directed  
15      at Mr. Vyrostko. The practice here has been, I think I  
16      am stating it correctly, that the witness who is asked  
17      the questions answers and then other witnesses can of  
18      course add something and we are most interested in what  
19      you have to say. So I don't have to say every time  
20      this is for Mr. Vyrostko, just assume that, please.

21                  To assist with this --

22                  MR. B. CAMPBELL: Just a moment. I  
23      assume just so the witnesses know, if Mr. Vyrostko  
24      having dealt with it or he feels that someone else is  
25      in a better position to deal with it, he should so

1 indicate or the additional witnesses who can bring  
2 their particular expertise to bear on that matter,  
3 should add that to the topic being discussed.

4 MR. SHEPHERD: Isn't that what I just  
5 said?

6 MR. B. CAMPBELL: Sometimes I like to say  
7 it in my own words to make sure I have got it right.

8 MR. SHEPHERD: To assist with the  
9 introductory part of this cross-examination, we would  
10 like to file our first exhibit which has been provided  
11 to the panel. It hasn't been provided to counsel, but  
12 it has been provided the Board, which is entitled, "The  
13 Role of Independent Power". I wonder if we could get  
14 an exhibit number for that.

15 THE REGISTRAR: This one will be 324.

16 MR. SHEPHERD: Thank you.

17 ---EXHIBIT NO. 324: "The Role of Independent Power",  
18 dated May 28, 1991.

19 CROSS-EXAMINATION BY MR. SHEPHERD:

20 Q. Mr. Vyroostko, could you please  
21 identify this document?

22 MR. VYROSTKO: A. I believe the document  
23 represents the overheads I used in a presentation I  
24 made to the Municipal Electric Association at the  
25 summer conference earlier this summer.

1                   THE CHAIRMAN: Did you say this summer?

2                   MR. VYROSTKO: Yes. In fact, the date on  
3 here is May 28th.

4                   MR. SHEPHERD: Q. Actually, just before  
5 we get into this, perhaps as an aside I could just ask  
6 you whether it would be correct to say that the  
7 cooperation and assistance of the municipal utilities  
8 is as important to Hydro in the independent power area  
9 as it is in the demand management area as we heard  
10 evidence on earlier.

11                  MR. VYROSTKO: A. I can't answer the  
12 question with regard to making a call whether it's  
13 equally as important.

14                  We see the role of the utilities as being  
15 important for us because a lot of the customers there  
16 are the cogenerators, the steam users. And so,  
17 therefore, as I mentioned in direct evidence yesterday,  
18 our regional customer service people are out there  
19 dealing with customers, or, in many cases, the utility  
20 reps are dealing with customers, must know the  
21 advantages of cogen.

22                  So, therefore, I would think that as we  
23 have said, the utilities do play an important role, but  
24 I can't decide whether it's equal or less than --

25                  Q. Fair enough. You didn't actually

1 refer to the involvement of municipal utilities in your  
2 direct, did you?

3 A. No, I did not. I just referred to  
4 our customer service reps.

5 Q. My recollection is that Ms. Fraser,  
6 in Panel 4, said with respect to municipal utilities  
7 that their involvement is - and this is her phrase and  
8 I am going to ask you whether it applies to independent  
9 power as well as - critical to the delivery of  
10 successful demand management programs. Is it fair to  
11 say that's true also of independent power?

12 A. I don't think so.

13 Q. No? Why is that not true?

14 A. A couple of reasons why I would think  
15 it's not true is that the number of customers that in  
16 fact fit within a category of non-utility generator are  
17 much smaller than customers who fit under the category  
18 of demand management. In essence, virtually everybody  
19 has the opportunity for demand management, and the way  
20 I see our program right now, everybody doesn't have the  
21 opportunity for non-utility generation. So that is one  
22 reason, I think the people who can in fact have access  
23 to the opportunity.

24 Secondly, is that there are choices.

25 The utility can in fact either be part of the process

1 and say we would like to either buy the electricity  
2 ourselves, or they can turn around and say, "We are  
3 prepared, because of our expertise, not to be involved.  
4 Please go ahead to Ontario Hydro and negotiate directly  
5 with them." And, in fact, up until now most of the  
6 projects have been like that.

7 [11:08 a.m.]

8                   So, I don't think that they're a critical  
9 element. They're important but they're not critical.

10                  Q. The municipal utilities have a veto  
11 on any project in their area; right?

12                  A. They have first rights of refusal.  
13 In other words, they have the first rights to buy that  
14 electricity and, therefore, if they don't want to, they  
15 have in the past always turned it over to Ontario  
16 Hydro.

17                  Q. Still on this side issue, is it as  
18 true in respect of independent power as it is in the  
19 area of demand management that there is a level of  
20 ambivalence in the views of the municipal utilities to  
21 this area. I'm quoting again from Ms. Fraser.

22                  A. Again, I wouldn't want to use those  
23 words. I think what I would suggest, that there are  
24 many utilities that are not aware of non-utility  
25 generation, what it is all about, the benefits it has

1 to some of its customers and, therefore, from a  
2 technical perspective they are not informed on the  
3 issue.

4 But to suggest that they are ambivalent,  
5 I can't say that.

6 Q. Well, isn't it in fact true, Mr.  
7 Vyrosto, that with the exception of a few progressive  
8 municipals, the municipal utilities see independent  
9 power as nothing more than a nuisance that will do them  
10 more harm than good. Isn't that, in fact, what they've  
11 said to you on many occasions?

12 A. I don't believe that's correct.

13 Q. That's not true. So that it is also  
14 not true that you have been engaged in a running battle  
15 with the municipal utilities over their acceptance of  
16 non-utility generation; that's not true either?

17 A. Again, running battle, I'd say that  
18 that's not true. But I would suggest that we are  
19 working with the utilities to help them understand what  
20 non-utility generation is all about, to help them  
21 understand that non-utility generation not only  
22 benefits the system in total but indirectly benefits  
23 them because they're a part of the system and that, in  
24 fact, if it's a cogen opportunity within their  
25 municipal utility franchise, it has benefits because

1 it's customer driven.

2                   But to suggest they're battles, no,  
3 they're discussions to try to bring those people into  
4 the same awareness state as other people with regard to  
5 the industry.

6                   Q. Do you get resistance from  
7 municipals -- I can't even say the word.

8                   A. Yes, we've had some resistance with  
9 some utilities.

10                  Q. Mr. Vyrostko, you have in your  
11 possession a copy of the latest draft of the Municipal  
12 Electric Association's still secret official policy on  
13 independent power; is that correct?

14                  THE CHAIRMAN: There's a lot of  
15 editorializing in there.

16                  MR. SHEPHERD: Q. You can tell me any  
17 part of the question is wrong, if you wish.

18                  MR. VYROSTKO: A. Well, I guess secret  
19 is wrong.

20                  Q. Okay. Has it been -- it is now a  
21 public document?

22                  A. No, I believe it's still a draft  
23 document and I believe that that document was  
24 distributed to all the utilities at that summer  
25 conference and, therefore, anybody who was at the

1        summer conference would have access to that document.

2                    Q. All right. And, in fact, that draft  
3        was going to be released in September; wasn't it, but  
4        the chairman's speech changed that?

5                    A. I can't comment on that. That's the  
6        MEA policy, I wouldn't know when it's going to be  
7        released.

8                    Q. Well, don't you sit on their  
9        subcommittee on independent power?

10                  A. I only sit on the committee. The  
11       process after the committee puts forward a draft  
12       document, the process and timing of approval through  
13       the MEA organization is not my responsibility.

14                  Q. Would you say that that current draft  
15       would show an ambivalence towards independent power?

16                  A. No, I wouldn't say that.

17                  Q. Well, I wonder if you could undertake  
18       then, since everybody else seems to have it, to table  
19       that document?

20                  MR. B. CAMPBELL: Mr. Chairman, I think  
21       this is the same problem we ran into with Mr.  
22       Grenville-Wood.

23                  I do not believe it's appropriate to ask  
24       Ontario Hydro to produce documents that are in draft  
25       stages in other organizations about which Ontario

1       Hydro, through any mechanism, is asked to participate  
2       and comment on the development of that draft.

3                  I just believe it's entirely  
4       inappropriate and Ontario Hydro is not willing to give  
5       that undertaking.

6                  MR. SHEPHERD: Mr. Chairman --

7                  THE CHAIRMAN: Let me just, first of all.  
8       You don't have the document, I take it?

9                  MR. SHEPHERD: No, we do not.

10                 THE CHAIRMAN: You do not have the  
11       document.

12                 MR. SHEPHERD: No, but Mr. Vyrostko does  
13       deny that it's a secret document. I assume he can't  
14       say it's confidential after that.

15                 MR. CAMPBELL: Well --

16                 THE CHAIRMAN: He says if a document was  
17       distributed at a conference to everybody who was  
18       there -- perhaps Mr. Watson will get you the document,  
19       he's sitting there. He'll give you the document.

20                 MR. WATSON: Mr. Chairman, I have to find  
21       out exactly what document Mr. Shepherd is talking about  
22       and talk to my client about it. Perhaps we can discuss  
23       it at the break or at noon hour.

24                 THE CHAIRMAN: All right, let's leave it  
25       that way.

1                   MR. SHEPHERD: Okay. Sorry for the  
2 digression. I didn't expect to take so long on that.

3                   Q. Let's go back to your slide  
4 presentation. If you look at the first page that says  
5 Non-Utility Generation on it, all right, the first  
6 slide, I guess this is like the outline of what you  
7 plan to talk about; right?

8                   MR. VYROSTKO: A. Yes.

9                   Q. The thing that strikes me, Mr.  
10 Vyrostko, is these five questions seem to be pretty  
11 rudimentary given that you're talking to an audience of  
12 professionals in the summer of 1991.

13                  Do the municipal utilities even today  
14 know that little about independent power that you have  
15 to go through the basics?

16                  A. To some extent, yes.

17                  Q. Is that a problem, is that a problem  
18 you have to deal with?

19                  A. I wouldn't characterize it as a  
20 problem. Let me explain, that there's over 300  
21 municipal utilities in the province and with any given  
22 issue some of those utilities are much further ahead  
23 than others, whether you're talking about demand  
24 management programs, whether you're talking about  
25 non-utility generation programs, whether you're talking

1       about their expertise with regard to transmission  
2       facilities or whatever.

3                   So, any time you want to discuss an issue  
4       with the utility, you could be, in fact, dealing with a  
5       utility that is very informed about it or one that's  
6       very little informed about it.

7                   And because I had never spoken to the MEA  
8       on non-utility generation, this was my opportunity to  
9       try to cover off the general information needs for the  
10      utilities across the board of all utilities.

11                  Q. So that the first time MEA members  
12      heard from you formally was in 1991?

13                  A. The total membership.

14                  Q. Yes.

15                  A. Yes.

16                  Q. Was this year? Okay.

17                  THE CHAIRMAN: Well, I hesitate to  
18      interrupt, but it occurs to me that even this panel,  
19      who has had the benefit of DSP and all, had to get some  
20      rudimentary basic foundation information yesterday in  
21      order to appreciate the other things that were going to  
22      be said.

23                  But, more importantly, let's assume,  
24      without commenting on it, that the Municipal Electrical  
25      Association is dead against NUGS in every respect, what

1 has that got to do with the cross-examination of this  
2 panel; that's what I'm having some little difficulty  
3 with.

4 MR. SHEPHERD: Mr. Chairman, my next few  
5 questions will make that clear, I think.

6 THE CHAIRMAN: All right.

7 MR. SHEPHERD: Q. Mr. Vyrosto, is it  
8 fair to say that the majority of the industrial steam  
9 hosts in the Province of Ontario are in the municipal  
10 PUCs districts?

11 DR. CONNELL: I'm sorry, I couldn't  
12 understand your question. Could you repeat it.

13 MR. SHEPHERD: Q. The majority of the  
14 steam hosts -- industrial steam hosts in the Province  
15 of Ontario you could put cogeneration plants are in the  
16 districts run by the PUCs, the municipals?

17 MR. VYROSTKO: A. That's correct.

18 Q. And is it true that you can't deal  
19 with people who want to cogenerate at those sites  
20 unless you have the consent of the municipal; is that  
21 your current policy?

22 A. We can deal with the actual customer  
23 and some of the issues associated with the customer  
24 through a couple of different ways.

25 One is that a number of our regional

1 customer energy services representatives, in fact, do  
2 call upon customers within utilities as an established  
3 relationship with the utilities, and so those  
4 representatives, as they're out there dealing with the  
5 actual steam user, the customer, can be talking about  
6 cogeneration.

7 So, the utility itself is not the only  
8 person that would talk to an industrial customer within  
9 the utility.

10 Q. I wasn't talking about marketing  
11 though, I was talking about buying power, Mr. Vyrostko.  
12 You can't buy power from a cogenerator in any town in  
13 this province that has a PUC unless the PUC consents;  
14 is that not your policy?

15 A. That's correct.

16 Q. Is it not also true that the vast  
17 majority of institutional commercial and residential  
18 cogeneration opportunities, to the extent that they  
19 exist in this province, are in the PUC districts?

20 A. That's correct.

21 Q. Same rule as to consent?

22 A. Let me, again, digress for a minute  
23 here. There are two ways that the project can, in  
24 fact, be incorporated, we talked about that yesterday;  
25 purchase generation or load displacement.

1                   We can't buy the electricity from that  
2       customer without the consent of the utility, but  
3       there's nothing to stop the customer and the utility  
4       establishing a load displacement project.

5                   Q. Can you pay an incentive to deal with  
6       the difference between avoided cost and lost revenues  
7       to somebody in a municipal utility PUC if the municipal  
8       utility objects?

9                   A. If they object we can't.

10                  Q. All right. Where am I here.  
11       Non-utility Generation, the next page is the famous  
12       definition that we've talked about a number of times;  
13       that is, basically any generation in Ontario not owned  
14       by Hydro; right?

15                  A. Yes.

16                  Q. Is non-utility generation. Do I  
17       understand your evidence yesterday to be that it  
18       doesn't include any more of this category you call  
19       major supply NUGS, or are they still non-utility  
20       generation just treated differently?

21                  A. Major supply NUGS are non-utility  
22       generation.

23                  Q. They're still in the definition?

24                  A. That's correct.

25                  Q. So you haven't changed the

1 definition?

2 A. That's correct.

3 Q. I take it this includes generation  
4 owned by municipal utilities?

5 A. That's correct.

6 Q. And, in fact, you're encouraging that  
7 right now; aren't you?

8 A. We are encouraging that, yes.

9 Q. And I take it, it also includes  
10 non-utility generation owned by regulated utilities,  
11 the few private regulated utilities still in existence  
12 in Ontario, like Great Lakes Power?

13 A. That's correct.

14 Q. And, in fact, you just added a  
15 project to your NUG list that is built by a regulated  
16 utility; haven't you, Magpie?

17 A. We added that last year.

18 Q. Yes, well

19 THE CHAIRMAN: I'm sorry, what was that  
20 one.

21 MR. SHEPHERD: A project, 43 megawatts, I  
22 believe, on the Magpie River, Great Lakes Power  
23 Development.

24 Q. So, what you call non-utility  
25 generation isn't really non-utility at all; is it?

1 MR. VYROSTKO: A. Well, if you go by the  
2 definition, non-utility generation is generation in  
3 Ontario not owned by Ontario Hydro.

4 Q. But it includes lots of utilities?

5 A. Municipal utilities, but not Ontario  
6 Hydro.

7 Q. Well, and regulated private  
8 utilities?

9 A. Yes.

10 Q. Does it also include gas utilities?  
11 Is Centra Gas a regulated gas utility, Mr. Vyrostko?

12 A. Yes, they are.

13 Q. Are they a non-utility generator?

14 A. Yes, they are.

15 Q. Now, is it true that the benefits of  
16 generation owned by regulated utilities are not the  
17 same as the benefits of generation owned by profit  
18 motivated private entities?

19 A. Benefits to who?

20 Q. Well, any of the benefits, to Hydro,  
21 to the people of Ontario?

22 A. I would think that some of the  
23 benefits associated with non-utility generation could  
24 cover off ownership with any of those different  
25 players.

1                   Q. Fair enough. So some of the benefits  
2 are the same whether it's a utility or a private  
3 company that owns the facility; correct?

4                   A. That's correct.

5                   Q. Are some of the benefits not the  
6 same?

7                   A. They could be.

8                   Q. Are there some benefits that you  
9 don't get with regulated utilities owning facilities?

10                  A. I would think if a regulated utility  
11 weren't building a plant using waste fuel, for  
12 instance, then you wouldn't get the benefits of that  
13 type of environmental project because they obviously  
14 wouldn't build that.

15                  Q. Why wouldn't they build that?

16                  A. Well, I said if they wouldn't -- if  
17 they didn't build that.

18                  Q. No, I'm asking a generic question,  
19 Mr. Vyrosto.

20                  A. A generic question. I would think  
21 that the regulated utility should be able to have the  
22 same benefits as any other one in a non-utility  
23 generation project.

24                  [11:21 a.m.]

25                  Q. So, for example, one of the benefits

1       of non-utility generation, isn't it that the ratepayers  
2       don't have a risk of cost overruns and things like  
3       that?

4                     A. Risk off-loading is a benefit, yes.

5                     Q. Yes. But if it is a regulated  
6       utility like a PUC, that is not true, is it?

7                     A. It is true to Ontario Hydro.

8                     Q. Well, but, we weren't talking about  
9       Ontario Hydro. We were talking about the ratepayers.  
10      Their ratepayers eat the cost overrun, don't they?

11                  A. They would within their municipal  
12      utility.

13                  Q. Okay. And that is not like a private  
14      generator, is it?

15                  A. In that heat eats the overruns.

16                  Q. Okay. And there's lots of other  
17      examples like that operating cost, et cetera, and  
18      delays? Those are all risks that the private sector  
19      takes that a regulated utility can't by its nature  
20      take; isn't that correct?

21                  A. I am not sure if I can necessarily  
22      say that that is correct in all cases.

23                  Q. Well, Mr. Vyrosto, isn't it true  
24      that any utility that has cost passed through  
25      pricing -- you know what that is, right?

1                   A. Yes.

2                   Q. Isn't it true that any utility that  
3       has that cannot structurally take a risk? Only the  
4       ratepayers take the risk; isn't that right?

5                   A. That's correct.

6                   Q. So, whenever we talk about risk in  
7       the non-utility generation context, is it fair to say  
8       that projects owned by municipal utilities or any other  
9       utility, it doesn't apply there?

10                  When you talk about risk off-loading, it  
11       doesn't apply in the case of utilities doing projects;  
12       is that fair?

13                  A. If the utility themselves were a  
14       project developer, it would not apply there.

15                  Q. There. Let's go to your --

16                  A. Can I just add a point there?

17                  Q. Oh, sure.

18                  A. Again, when we are talking risk  
19       off-loading, if we talk about risk off-loading to the  
20       ratepayers and the ratepayers are the utility  
21       ratepayer, but at the same time, the one thing that we  
22       look for when we are looking at projects is from the  
23       Ontario Hydro perspective the same thing, risk  
24       off-loading from Hydro's perspective. What we are  
25       trying to do is ensure that ratepayers across the

1        province can, in fact, avoid some of the issues  
2        associated with non-utility generation.

3                   So, even if a municipal utility were to,  
4        in fact, put a project in, then all the customers of  
5        the province would not see the risks of a project being  
6        overrun or delayed or whatever, typically that Hydro  
7        would have; the rest of the province would not see  
8        that. Only the local utility would have the risks  
9        associated with that project.

10                  Q. Do I take your statement correctly to  
11        be that you believe it is good policy to allow all of  
12        the ratepayers to dump a risk on local ratepayers?

13                  A. I didn't say that that was a policy.  
14        I was just suggesting that when a developer puts a  
15        project together, the developer assumes the risks. If  
16        the private developer assumes them, it is the private  
17        developer that assumed the risk. If the municipal  
18        utility does a project, the municipal utility assumes  
19        the risk. Again, the rest of the province, in fact,  
20        its value of that overall project.

21                  Now, if that local utility cannot assume  
22        risks through any mechanism but to charge that back to  
23        the ratepayer, then that is one of the issues they have  
24        to look at when they are looking at the development of  
25        non-utility generation.

1                   Q. You have a policy position right now  
2                   that you encourage non-utility generation by municipal  
3                   utilities; didn't you just say that?

4                   A. Our policy is to try to -- we have an  
5                   initiative that is trying to increase the involvement  
6                   and the awareness of non-utility generation with  
7                   municipal utilities.

8                   Q. Including building their own  
9                   projects?

10                  A. If that was in the best interest of  
11                  the utility.

12                  Q. Oh, okay. But you haven't  
13                  considered -- well, let me put it another way: Does  
14                  that imply then that you think it is a good idea for  
15                  utilities to build NUGs?

16                  A. As a general statement, I can't say  
17                  that. Some municipal utilities have access to  
18                  resources or access to assets that, in fact, would  
19                  create a good opportunity for them to build a facility.

20                  But that is not a natural for most  
21                  utilities. Most utilities may not have the assets.  
22                  They, themselves, may not have a steam host. They may  
23                  not have a hydraulic facility within their jurisdiction  
24                  to develop it.

25                  Q. So, it is very site specific?

1                   A. It is.

2                   Q. So, you haven't looked at -- in  
3                   developing your policies with respect to municipal  
4                   utilities, Ontario Hydro's policies with respect to  
5                   municipal utilities and NUGs, you haven't looked at all  
6                   at the issue of shifting risks between ratepayers, have  
7                   you?

8                   A. I can't say directly that we have.

9                   MR. SHEPHERD: Mr. Chairman, I am going  
10                  to actually turn back to this exhibit. Maybe that  
11                  would be a good time for a break before I start that.

12                  THE CHAIRMAN: All right. We will take a  
13                  15 minute break.

14                  THE REGISTRAR: This hearing will recess  
15                  for 15 minutes.

16                  ---Recess at 11:27 a.m.

17                  ---On resuming at 11:50 a.m.

18                  THE REGISTRAR: Please come to order.  
19                  This hearing is again in session. Be seated, please.

20                  THE CHAIRMAN: Mr. Shepherd?

21                  MR. SHEPHERD: Q. Mr. Vyrosto, could  
22                  you just take your slide show and turn a couple of  
23                  pages over to the first page headed up "benefits of  
24                  non-utility generation"?

25                  And all I want to do, and I guess maybe

1 similar to what you did in the presentation, is just  
2 use it as a visual aid to help us go through these  
3 benefits and what you are doing about them.

4 Let's just start with the first one,  
5 supply flexibility. You referred to that one  
6 yesterday, as well, right? Just briefly describe what  
7 you mean by supply flexibility.

8 MR. VYROSTKO: A. One of the issues that  
9 we talked about yesterday with non-utility generation  
10 is that typically, being smaller projects, they, in  
11 fact, have a shorter lead time and a shorter  
12 construction time and a shorter design period than the  
13 larger utility facility. And, therefore, you can bring  
14 them on board much faster than a typical large utility  
15 one. And thus, it gives a better fit in the changing  
16 needs of the overall system, so ...

17 Q. I actually totally misunderstood  
18 that. I thought that you had said in the speech when  
19 you were talking about supply flexibility that it meant  
20 a broader resource mix; am I misunderstanding that,  
21 more different fuels and more different types of  
22 technologies?

23 A. Well, I think --

24 Q. I guess I am misunderstanding.

25 A. Well, there is better resource

1 utilization which another one down there that talks  
2 about --

3 Q. So, this is shorter lead times,  
4 right?

5 A. That would be one of them.

6 Q. Didn't I hear Mr. Snelson say  
7 yesterday - and maybe you could confirm this, Mr.  
8 Snelson - that the two or three year lead time you  
9 consider for cogeneration is net of negotiating time,  
10 right?

11 MR. SNELSON: A. Yes, I believe that is  
12 what I said.

13 Q. So, if it takes two or three years to  
14 negotiate a contract and another two or three years to  
15 do the project, then you have a much longer lead time,  
16 right?

17 A. Mr. Vyrostko could speak to the  
18 additional lead time for negotiating.

19 Q. Mr. Vyrostko, we are going to talk in  
20 detail about lead times and about contracting later.

21 But is it generally true that whatever  
22 the negotiating time, whether it is a year or two years  
23 or three years or whatever, it then is another couple  
24 or three years before a project comes on stream?

25 MR. VYROSTKO: A. Yes. The negotiating

1 period has to be added on to the time it takes to  
2 construct a facility.

3 Q. Are we in the right range here, one,  
4 two or three years?

5 A. Four years. We typically use around  
6 four years from the time the project comes in, a formal  
7 proposal, to the time it is in service.

8 Q. Is it fair to say that the sort of  
9 period you have from first contact with the proponent  
10 until contract is currently in the two or three year  
11 range?

12 A. Not necessarily. We probably have  
13 some at that range and we have also some probably in  
14 six months, so it is a wide scope of time period there.

15 Q. Now, you have talked about  
16 geographical flexibility. That, I guess, means  
17 generation dispersed around the province. That is a  
18 system benefit as I heard you yesterday, right?

19 A. That's correct.

20 Q. And that is more true, isn't it, of  
21 smaller projects than larger projects; isn't that  
22 right?

23 A. No, not necessarily. If you have  
24 larger projects that are located where there are loads  
25 specifically balanced or matched to that, then there is

1 no reason why that doesn't also give the same value of  
2 geographical flexibility.

3 Q. So, it is not the diversity of  
4 geographic location that is a benefit; it is the  
5 specific location of the project that matters, right?

6 A. No, it is not the specific location.  
7 I guess what I am saying is that if you get generation  
8 spread around the province, there is advantage to that  
9 because it matches -- it reduces transmission  
10 requirements. It helps in terms of matching load and  
11 generation. And so, both sides and location can help  
12 in that overall opportunity.

13 Q. But you have just signed up a 350  
14 megawatt combined cycle project, right, one project; it  
15 is only one project?

16 A. That's correct.

17 Q. And that is only in one location,  
18 right?

19 A. Yes.

20 Q. So, you are not getting any diversity  
21 out of that project, are you?

22 A. Diversity with respect to?

23 Q. Geographic diversity?

24 A. Well, relative to the 3,000 megawatts  
25 at Pickering, that is some geographic flexibility

1 there.

2 Q. And relative to 350 megawatts of  
3 small hydro, it is a lot less diversity, isn't it?

4 A. Yes.

5 Q. So, when I asked you isn't it true  
6 that the smaller projects give you more diversity than  
7 the larger projects, that is generally true, isn't it?

8 A. Generally true, that's correct.

9 MR. SNELSON: A. Perhaps I can add  
10 something there, Mr. Shepherd. The benefits of things  
11 being spread around and diverse is one issue. And as  
12 Mr. Vyrostko has said, if generation is spread around  
13 and matches load, in the general sense, that will tend  
14 to reduce transmission requirements and transmission  
15 losses and have the benefits that we have talked about.

16 There is also a question though of size  
17 that is being discussed and in terms of and also  
18 location; and that is that spreading things around at  
19 any particular point in regards to the system,  
20 spreading things around will end up with some things  
21 being in locations that for the present state of the  
22 system are more desirable than others and some that are  
23 less desirable than others.

24 So, it doesn't necessarily mean that  
25 spreading them around at this point in time is the

1 best, but spreading them around as a long-term strategy  
2 is good.

3 Q. Well, okay. I only had one question  
4 on this.

5 Do I understand your evidence to be that  
6 spreading them around is a benefit to the system as a  
7 general principle?

8 A. Over a long period of time, yes. At  
9 any particular point in time, spreading them around  
10 will result in some locations being more desirable and  
11 some less desirable than others.

12 Q. All right. Then you have lower  
13 capital and financing costs, Mr. Vyrostko, the next  
14 benefit.

15 I assume that doesn't mean lower capital  
16 and financing costs to Ontario Hydro.

17 MR. VYROSTKO: A. That is comparing the  
18 costs that Hydro would have versus what the private  
19 developer would have.

20 Q. So it is just cheaper power?

21 A. It may be cheaper power.

22 Q. All right. In your experience, do  
23 the municipal utilities that build projects build them  
24 with lower capital and financing costs than you would?

25 A. I can't answer that. I am not aware

1 of whether they are greater or less than.

2 Q. Well, perhaps you could relate your  
3 answer then to the small Hydro facility recently  
4 brought in service by the Almonte PUC. That is  
5 municipal utility in eastern Ontario, yes?

6 A. Yes.

7 Q. And you have a contract with them  
8 or -- you have listed them on your list of in-service  
9 NUGs, correct?

10 A. Yes.

11 Q. And isn't it true that the capital  
12 cost of that project far exceeds both industry  
13 standards and Ontario Hydro standard costs for  
14 hydraulic?

15 [12:00 p.m.]

16 A. I am not familiar with the elements  
17 that project so I can't speak to that.

18 Q. Mr. Brown, are you familiar with that  
19 project?

20 MR. BROWN: A. No, I am not. That  
21 project proceeded without NUG division assistance.

22 Q. So you were not involved in it at  
23 all?

24 A. No, we are not.

25 Q. It's on your list of program driven

1 NUGs, though, isn't it?

2 A. That project has been added because,  
3 as I mentioned in my direct, the historical load  
4 displacement is 1,200 megawatts and everything that is  
5 added to that number is included in our 3,100 figure.

6 Q. So that is a natural NUG?

7 A. It's one of the naturals, so is the  
8 Magpie you mentioned earlier.

9 Q. Isn't it true, Mr. Vyrostko, that  
10 regulated entities simply don't have the same incentive  
11 as private companies to keep costs down and so they  
12 don't?

13 MR. VYROSTKO: A. I can't say that is  
14 correct.

15 Q. You don't know whether that's  
16 generally true?

17 A. No, I don't.

18 Q. Let's go at this a different way  
19 then.

20 You said that one of the benefits of  
21 non-utility generation is lower capital and financing  
22 costs. Dealing just with private companies, why is it  
23 that they can build generating facilities cheaper than  
24 Ontario Hydro and with lower financing costs?

25 A. For those that can build cheaper than

1       a major utility, one of the reasons why is that they  
2       would buy, for instance, off-the-shelf equipment which  
3       is sized to their specific project as opposed to the  
4       specific system need that a major utility would be  
5       looking at.

6                  In some cases they, in fact, may buy used  
7       equipment as opposed to new equipment, and so therefore  
8       they would be taking advantage of the marketplace and  
9       the deals that they can buy there.

10                 They, in most cases, are much smaller  
11      entities and so therefore their overheads are much  
12      smaller.

13                 As I said yesterday in testimony, Ontario  
14      Hydro are a large utility, typically it's almost  
15      structured in its expertise and its efficiency is  
16      towards larger projects, whereas developers are very  
17      lean, they typically don't have overheads, they  
18      contract out most of the services that they provide, so  
19      therefore they would have lower costs.

20                 Q. Ontario Hydro has actually had some  
21      direct experience with the private sector doing a lot  
22      better than Ontario Hydro head to head, right? For  
23      example, the Galetta generating station, are you  
24      familiar with that station?

25                 A. I am familiar with that station.

1 Q. And isn't it true that it was owned  
2 by Ontario Hydro?

3 A. At one point in time.

4 Q. It was sold to the private sector in  
5 1984?

6 A. I believe so.

7 Q. Isn't it true that since then it has  
8 consistently produced more power with fewer problems  
9 and has been able to upgrade, which Ontario Hydro  
10 couldn't do, all as in comparison to Ontario Hydro,  
11 it's vastly out-performed anything that Ontario Hydro  
12 had done with it; isn't that true?

13 A. I can't answer that. I am not aware  
14 of that.

15 Q. So, you haven't followed that at all?  
16 You are not concerned with that sort of thing?

17 A. Yes, we are concerned with the  
18 reliability of non-utility generation. I am not aware  
19 of that particular project with respect to the results  
20 that you are talking about.

21 Q. Well, I am going to ask this question  
22 anyway, you are quite welcome to say you don't know if  
23 you don't. Isn't the situation with respect to the  
24 Galletta generating station so bad that in 1986 - and I  
25 am going to give you a quote here, see if it's

1       correct - this is at a meeting sponsored by the  
2       Ministry of Energy on small hydro at Elora Mill  
3       attended by many of the people in the small hydro  
4       industry, isn't it true that Allan Barnstable - and by  
5       the way, he is your second in command right now; is  
6       that correct?

7                     A. That's correct.

8                     Q. Isn't it try that he said referring  
9       to Galetta, "We'll never make that mistake again."  
10      Isn't that true?

11                  A. That was before my time and I can't  
12      speak to what was said in 1986.

13                  Q. Can you undertake to find out whether  
14      that was the statement he made?

15                  MR. B. CAMPBELL: First of all, I don't  
16      even know what the mistake is even if the quote is  
17      accurate, I don't have a clue what the mistake is that  
18      is being talked about. Quite frankly, I am not at all  
19      clear how any of this is relevant to this panel's  
20      evidence on the development of the NUG industry.

21                  It's a statement made in those times by  
22      some Hydro employee that my friend is using in some  
23      context that I don't even know whether it is correct  
24      even if it was made. I just don't think it's relevant  
25      or material to the issues before you, Mr. Chairman.

1                   MR. SHEPHERD: Mr. Chairman, perhaps I  
2       could go to the next couple of questions which should  
3       demonstrate the relevance and then we could deal with  
4       this.

5                   Q. Mr. Vyrosto, is it true that Ontario  
6       Hydro owns quite a number of in-service and mothballed  
7       small hydraulic facilities in the up to 20 megawatt  
8       range, say?

9                   THE CHAIRMAN: Did you say in-service?

10                  MR. SHEPHERD: In-service or mothballed.

11                  MR. BROWN: What is your definition of  
12       mothballed?

13                  MR. SHEPHERD: Q. It's not operating.

14                  MR. BROWN: A. We have small hydro  
15       facilities in operation.

16                  Q. You have none that are not operating  
17       that Ontario Hydro owns?

18                  A. I am not aware of any that are not  
19       operating on our system.

20                  Q. Sorry? I didn't hear you, I'm sorry?

21                  A. I am not aware of any small hydraulic  
22       facilities that are not in operation.

23                  Q. All right. Now, let's just deal with  
24       the ones that are operating.

25                  Is it true, Mr. Vyrosto, that you have

1 received proposals from a number of private sector  
2 developers to acquire small hydro sites and upgrade  
3 them.

4 MR. VYROSTKO: A. We have received  
5 proposals for that.

6 Q. Is it true that you have since 1986  
7 rejected every such proposal?

8 A. I believe we have because we own the  
9 facilities.

10 Q. Well, the people wouldn't be asking  
11 you to sell them to them if you didn't own them; isn't  
12 that right?

13 A. But if we own them then we are  
14 operating the facilities, and so therefore, because  
15 they are operating, we are currently retaining them for  
16 our own use.

17 Q. Why wouldn't you consider a proposal  
18 that where a private developer says, I will take this,  
19 I will give you a big cheque for it and I will upgrade  
20 it so you will have more capacity, why wouldn't you  
21 consider that?

22 A. Well, in fact, we have a program that  
23 is underway in Hydro that looks at all of these  
24 facilities and is looking at what the costs would be of  
25 maintaining the facilities and/or rehabilitating the

1 facilities. If, in fact, there was an advantage to  
2 turn it over to the private sector, we would be making  
3 that decision.

4 Q. Mr. Vyrosto, is it true that in 1984  
5 when Galetta was sold to the private sector --

6 THE CHAIRMAN: Sorry, what is that word?

7 MR. SHEPHERD: Galetta, G-A-L-E-T-T-A.

8 THE CHAIRMAN: Thank you.

9 MR. SHEPHERD: Q. Is it true that in  
10 1984 when Galetta was sold to the private sector,  
11 Ontario Hydro announced at that time that it was  
12 planning to sell quite a number of facilities to the  
13 private sector; isn't that right?

14 MR. VYROSTKO: A. Again, unfortunately,  
15 I can't answer that.

16 Q. You were involved in the  
17 establishment of Ontario Hydro's policy as to the sale  
18 of small hydraulic sites?

19 A. I was part of that policy, that's  
20 correct.

21 Q. You haven't looked at why you had  
22 past policies at all, or even what they were?

23 A. At the time when I was involved in  
24 that policy I did not go back and look at that, that's  
25 correct.

1                   Q. Okay. And you weren't concerned when  
2        you helped set that policy, the current policy, you  
3        weren't concerned with looking at the one example where  
4        you had actually done it to see whether it had been  
5        good or bad, that is Galetta?

6                   A. What I did look at was to see whether  
7        this policy was both consistent with the needs of the  
8        industry in trying to develop the industry and at the  
9        same time fulfill the needs of Hydro to maximize the  
10       facilities they had. The way I interpreted the policy  
11       and worked with it was that the thrust that we were  
12       taking was positive for the industry.

13                  Q. Sorry, it was positive for the  
14        industry to refuse to sell your facilities to the  
15        private sector, is that what you are saying?

16                  A. No, that's not what our policy is.

17                  MR. B. CAMPBELL: Mr. Chairman, that is  
18        not what the witness said.

19                  What the witness said, quite clearly, was  
20        that these are all being reviewed and that that  
21        decision has yet to be made. I think he said there is  
22        a program in place to review those facilities, and that  
23        when those were all evaluated, some decisions would be  
24        made.

25                  It's precisely not what my friend

1 suggests.

2 MR. SHEPHERD: Mr. Chairman, I think Mr.  
3 Campbell is the one who has misunderstood.

4 I will ask the question directly.

5 Q. The question is: Is it your current  
6 policy that you will not sell small Hydro sites that  
7 are operating to the private sector?

8 MR. VYROSTKO: A. And I believe I  
9 answered that by saying we have a policy that says we  
10 review every site we have. We are looking at the costs  
11 of that site and what it would take to rehabilitate it,  
12 and for those sites that we feel are appropriate to be  
13 turned over to the private sector, we will be doing  
14 that.

15 Q. Excuse me just a second.

16 Just two more questions on this, which is  
17 again going longer than I expected. No, one more  
18 question on this.

19 Am I correct in understanding that since  
20 the Galetta sale there have been no sales of Ontario  
21 Hydro sites to the private sector; is that true?

22 A. I don't believe so.

23 Q. Let's go to the next page. We have  
24 already touched on this benefit, reduced risk. I  
25 understand from your direct evidence and what you said

1 just this morning that buying power from independent  
2 producers allows Ontario Hydro to lay risks off to the  
3 private sector. Things like risk of capital cost  
4 overruns, operating expense overruns, production  
5 inefficiencies, forced outages, that sort of thing; you  
6 can pass those off to the private sector, is that  
7 correct?

8                   A. That's correct.

9                   Q. But isn't it true, Mr. Vyrostko, that  
10 in recent contract negotiations with project proponents  
11 Hydro has been agreeing to accept risks such as  
12 increases in the cost of natural gas, increases in the  
13 cost of natural gas transmission, changes in interest  
14 rates, et cetera, et cetera; isn't that true?

15                  A. Hydro will accept some risk. In  
16 fact, if I just step back. In the evidence that I  
17 believe I said yesterday, I said negotiating allows us  
18 to balance off risks and benefits to both Ontario Hydro  
19 and to the project such that the project becomes a  
20 viable project.

21                  Hydro has accepted risks on the one side  
22 with regard to gas pricing, knowing that if the gas  
23 prices were not to materialize we would gain all the  
24 benefits associated with that. So, there a sharing of  
25 the risks and the benefits. As long as that's taken

1       into context with regard to the entire deal, then it's  
2       something that is perceived to be of value to both the  
3       developer and Ontario Hydro.

4                   Q. And you accepted risks like interest  
5       rates; right?

6                   A. I don't believe we have accepted  
7       interest rate risks.

8                   Q. That's something you won't accept if  
9       the developer asks for it?

10                  A. I didn't say we won't accept it. I  
11       said we haven't accepted.

12                  Q. Isn't the reason for that that the  
13       only time that Hydro agreed to that, the developer  
14       ultimately decided it didn't need it?

15                  A. I can't --

16                  THE CHAIRMAN: Strange developer who  
17       wouldn't take a guarantee on interest rates.

18                  MR. SHEPHERD: Well, the witness can tell  
19       us whether that's in fact true.

20                  Q. Isn't it in fact true, Mr. Vyrostko?

21                  MR. VYROSTKO: A. I am not aware of that  
22       specific situation, so to say that it happened as you  
23       explained it, I am not aware of that, no.

24                  Q. Well, on the big projects, or ones  
25       that have usual risk arrangements, don't you look at

1 them?

2 A. Yes, I do.

3 Q. But you never saw anything like that?

4 A. Not that I recall.

5 Q. Isn't it true, Mr. Vyrosto, that on  
6 the 90 megawatt Boise Cascade cogeneration project in  
7 Fort Frances, if the lumber company that's buying the  
8 process heat stops buying it, Hydro has agreed to pay  
9 the developer extra power payments to compensate for  
10 the loss of steam revenues; isn't that right?

11 A. That's correct.

12 Q. Isn't it true in that case that if  
13 you have to make those payments, Ontario Hydro has to  
14 make those payments, the total cost to Ontario Hydro of  
15 the power from that facility will exceed the avoided  
16 cost as it was then calculated; isn't that true?

17 A. I'm not aware of that.

18 Q. Can you undertake to find out?

19 A. I can do that.

20 MR. SHEPHERD: Finally got an  
21 undertaking. Is that 322.1?

22 THE CHAIRMAN: 322.1.

23 ---UNDERTAKING NO. 322.1: Ontario Hydro undertakes to  
24 provide information about the 90 megawatt  
Boise Cascade contract.

25 MR. SHEPHERD: Q. Just in anticipation

1 of that, it is your policy, is it not, that Hydro will  
2 not pay more than avoided cost?

3 MR. VYROSTKO: A. That's correct.

4 [12:14 p.m.] Q. And is that because Hydro doesn't  
5 believe it's in the best interest of the ratepayer or  
6 the public interest to pay more than avoided cost?

7 A. That's correct.

8 Q. In the recently announced 110  
9 megawatt TransAlta McDonnell Douglas project, that's a  
10 cogeneration project in Mississauga; correct?

11 A. Right.

12 Q. You're taking some gas risks there;  
13 aren't you?

14 A. Again, I can't speak specifically to  
15 that contract. As I mentioned just previously, we have  
16 and we will continue to look at gas contracts that --  
17 or any contracts that there may be some risks on if we  
18 also saw on the other side the benefits coming back to  
19 us.

20 And so what we're doing there is managing  
21 the risks and the benefits of that project.

22 Q. You just don't know what risks you're  
23 taking in the McDonnell Douglas deal?

24 A. Well, I guess I can't talk  
25 specifically about any one contract because I think

1       that violates, you know, the confidentiality of any  
2       deal that we make with developers.

3                   I guess what I'm saying is that there are  
4       contracts that we have signed that we have, in fact,  
5       looked at the risk and benefits of gas pricing.

6                   Q. And you've taken some of those risks?

7                   A. Well, you only take -- yes, that's  
8       right, we would take the risk if that were to happen,  
9       but at the same time, if the situation of gas pricing  
10      were not to happen, then there's a ratepayer  
11      benefit that comes to the corporation.

12                  Q. What's the amount of compensation  
13       that Hydro is paid to take, say, a gas transmission  
14       risk? How do you calculate the compensation you're  
15       paid to take that risk?

16                  You're paid to take the risk; right, in  
17       the contract?

18                  MR. B. CAMPBELL: I'm sorry, I don't  
19       understand the question.

20                  MR. VYROSTKO: No, I don't understand it.

21                  MR. B. CAMPBELL: Do you mean is there a  
22       specific amount that is in cents per kilowatthour?

23                  THE CHAIRMAN: He means, what's the  
24       consideration for agreeing to guarantee to protect the  
25       developer against gas transmission problems.

1                   MR. VYROSTKO: Oh, you're talking about  
2 gas transmission.

3                   MR. SHEPHERD: Q. Any risk, but let's  
4 just say gas transmission. You take the gas  
5 transmission risk in a contract, you're paid to take  
6 that risk; right, the developer pays you to take that  
7 risk?

8                   MR. VYROSTKO: A. The way we negotiate  
9 the contract is that there's an entire element of value  
10 that the contract has and that has a certain value, and  
11 there is a number of elements that go into the  
12 project's costs from the developer's perspective,  
13 whether they be the capital costs, whether they be  
14 long-term operating costs, whether they be maintenance  
15 costs, whether they be fuel costs, and when we look at  
16 the contract we look at the predictability of all the  
17 pricing of all of those elements in the contract and  
18 our objective is to get that contract at or below  
19 avoided cost.

20                  Q. So you don't value the risk at all?

21                  A. So what happens is, in some cases, if  
22 to bring that entire project within avoided cost means  
23 that in one of those elements there is, let's say,  
24 there's a 50 per cent chance of a cost being slightly  
25 higher or a 50 per cent of the cost being slightly

1 lower, we take that risk depending on the project  
2 because there's an equal chance of us gaining.

3 Q. You take the risk because you could  
4 get the benefit on the same thing?

5 A. That's correct.

6 Q. Well, didn't you say that one of the  
7 benefits of non-utility generation is risk off-loading?

8 A. That's correct.

9 Q. And the type of risk off-loading that  
10 you're talking about there, isn't it risks where you  
11 also have benefits attached to them, like, cost  
12 overruns; you could also have costs coming under  
13 budget?

14 A. But from our perspective that doesn't  
15 show up because in the price of the product to the  
16 developer, you end up having one price, so if the  
17 developer were to, in fact, have a cost underrun, then  
18 the value of that goes to the developer, there's no  
19 sharing of that.

20 Q. No, I understand that. But in the  
21 case of cost overruns, it's to Hydro's benefit to be  
22 able to pass off the capital cost risk to the  
23 developer; right?

24 A. Yes.

25 Q. And it could be high or low, but it's

1 still a benefit to you to pass it off to them, let them  
2 take the good and the bad?

3 A. If they accept it, that's correct.

4 Q. Okay. But in the case of something  
5 like gas transmission, you're saying it's not a benefit  
6 to you to pass it off to the developer?

7 A. Yes, it is a benefit.

8 Q. Well, if it's a benefit and then you  
9 don't take that benefit, doesn't that mean that they  
10 should be paying you not to take it?

11 A. Well, I guess what I'm explaining,  
12 Mr. Shepherd, is that there's a broad spectrum of  
13 elements that go into a contract, and what we're trying  
14 to do is get a contract that is at or below avoided  
15 cost and maximizes ratepayer benefit, if we can do  
16 that.

17 For instance, if there's an opportunity  
18 to, in fact, take one of those elements of the contract  
19 and show that by assuming both the risks with the  
20 developer and ourselves we can get some very good  
21 ratepayer benefits out of the project with an equal  
22 chance of either one happening, then I think it's to  
23 the advantage of the ratepayer to do that.

24 Q. In the marketplace generally, we're  
25 not talking about your Hydro contracts now, I'm talking

1       about in the marketplace generally, is it fair to say  
2       that where the risk and reward of a particular future  
3       uncertain event is shifted from one entity to another,  
4       the one taking the risk gets, in addition to the up  
5       side as well, generally also gets paid to take the  
6       risk?

7                     A. I would think that might be a general  
8       principle.

9                     Q. But Hydro doesn't do that?

10                  A. First of all, I said that I think  
11       that might be a general principle. I would think that  
12       in the private sector there's many cases where people  
13       share in risks because of the shared benefits.

14                  Q. Okay. So do you offer that same risk  
15       sharing to smaller projects, small cogen, small Hydro  
16       under 5 megawatts?

17                  A. If there was an opportunity for being  
18       able to take advantage of that type of development, I  
19       would think we would.

20                  Q. Have you ever offered that to an  
21       under 5 megawatt project?

22                  A. I think we do that with our financial  
23       assistance program.

24                  Q. That's not what I'm asking though.

25                  A. Then I'm saying yes, we do.

1 Q. You do.

2 A. Through the financial assistance  
3 program.

4 Q. Can you explain how you do it through  
5 the financial assistance program?

6 A. For a small Hydro project we have an  
7 element called the guaranteed payment of a project and  
8 what we would do there is, because of the lack of  
9 predictability of the waterflows from year to year, we  
10 try to at least help the project along and take some of  
11 the uncertainties of waterflows by guaranteeing that we  
12 will pay a minimum amount of money to the developer  
13 that, in fact, would cover off the financing side.

14 And what we then do is, assume that over  
15 the lifetime of the project the waterflow will be as  
16 identified in the testing of that site, and what the  
17 developer says.

18 And so what we then do is, we will take  
19 the risks of that in any given point in time, in fact,  
20 continue to give that person a minimum payment that at  
21 least pays off the financing.

22 Q. Now, you don't actually take a risk  
23 in that case that you'll have to pay more under the  
24 contract than the avoided cost; do you?

25 A. Sure we do. If the project were not

1 to, for instance, continue for as long a period as we  
2 predict and, for instance, if the project, for whatever  
3 the reason, were to close up at the time when there  
4 were a number of these payments made, that project  
5 would be in a deficit position with us and that's the  
6 risk that we would be taking there.

7 Q. Well, we're going to come back to  
8 that. But do I understand correctly that the longest  
9 you will do that for; that is, pay the fixed payments,  
10 is twenty years. Isn't that your policy?

11 A. Yes, there is a time period to the  
12 guaranteed payment.

13 Q. You don't know what it is?

14 MR. BROWN: A. The time period is twenty  
15 years for the guaranteed payment to go on for a longer  
16 period contract.

17 Q. Okay. And isn't it true that small  
18 hydro facilities are built to last eighty to a hundred  
19 years; isn't that your own evidence?

20 MR. VYROSTKO: A. We have seen projects  
21 last that long.

22 Q. My question was: Isn't it true that  
23 in general small hydro has a life in the order of  
24 eighty to a hundred years? It's in the  
25 interrogatories, Mr. Vyrostko?

1                   A. If it's there, then it's eighty  
2 years.

3                   Q. Okay. So you'll take a risk over  
4 twenty years, your whole at the end of twenty years;  
5 right, it hasn't cost you one more dime at the end of  
6 twenty years as long as it lasts that long?

7                   A. Right.

8                   Q. So you're going to take a risk over  
9 twenty years that an eighty year project might end  
10 before twenty years; is that the size of it?

11                  A. That's correct.

12                  Q. That's not the same as your gas  
13 transmission risk situation; is it?

14                  A. I think it's similar to that, yes, in  
15 that there's a measure of risk that we are looking at  
16 in what is the value of sharing in that risk for that  
17 project to make that project viable and economic within  
18 the context of our program.

19                  Q. Well, you're talking about value  
20 again. Didn't I hear you say that you don't assign a  
21 value to taking these risks?

22                  THE CHAIRMAN: I don't think he said  
23 that. I don't think he ever said that.

24                  I think he said that you negotiate these  
25 contracts. It's a marketplace negotiation and you work

1 out a deal that keeps within the avoided cost area in a  
2 general way, but there are tradeoffs of one kind or  
3 another.

4 He didn't use the word tradeoffs, but  
5 that's what I took him to mean.

6 MR. SHEPHERD: Q. So is it then true  
7 that if you take a risk in a contract you get something  
8 else in the contract that compensates you for it?

9 MR. VYROSTKO: A. We would be expecting  
10 that, yes.

11 Q. Like a lower price?

12 A. Possibly.

13 MR. BROWN: A. Sorry. Definitely in the  
14 case of guaranteed payment, it is a lower price.

15 Q. Okay. But that's only for small  
16 hydro; right?

17 A. For hydraulic facilities.

18 Q. That's right. Which are small?

19 A. No.

20 Q. You don't have any big Hydro  
21 proposals in front of you right now?

22 A. I can't comment on individual  
23 proposals.

24 Q. You can't tell us whether you have  
25 any big Hydro proposals in front of you?

1                   A. Can you define big, please?  
2                   Q. Over 20 megawatts?  
3                   A. Yes, we do.  
4                   Q. You do. Over 50 megawatts? I mean,  
5 come on.

6                   A. Yes, we do.

7                   THE CHAIRMAN: What's the largest you've  
8 got?

9                   MR. BROWN: There's a proposal for over  
10 170 megawatts.

11                  THE CHAIRMAN: All right, thank you.

12                  MR. SHEPHERD: Q. Aside from that  
13 proposal, is it fair to say that, let's say, 95 per  
14 cent of the hydraulic proposals put to you are under 20  
15 megawatts?

16                  MR. BROWN: A. That's true.

17                  Q. What steps do you take in your  
18 contractual negotiations to ensure that whatever  
19 tradeoff you get for taking a risk, it constitutes fair  
20 value for taking the risk; is this just your business  
21 judgment?

22                  MR. VYROSTKO: A. No, there could be  
23 different things that we would do to cover off that.

24                  One is, on the one side we would look at  
25 a lower price of a project to cover that off, we could

1        look at securing the assets of the project, we could  
2        look at security of any type to protect against that,  
3        whether it's a letter of credit or whatever.

4                   So, there are different situations that  
5        we can use to protect against that risk.

6                   Q. No, but I guess my question was:  
7        What steps have you taken to ensure that the  
8        compensation or tradeoff that Hydro gets to take a risk  
9        reflects the fair market value for taking that risk;  
10      that it's got the right value to it?

11                  A. I think that's just a judgment that  
12      we make when we're negotiating with the project.

13                  Q. The only time that any risk reduction  
14      is offered under 5 megawatts is this guaranteed payment  
15      thing; right?

16                  A. I'm just trying to go in my mind, to  
17      some of the things that are there.

18                  MR. BROWN: A. I think it's true for any  
19      financial assistance option under the financial  
20      assistance program.

21                  Q. Okay. But things like gas  
22      transmission and gas price risk and that sort of stuff,  
23      that's not in your financial assistance program, that's  
24      just one of the deals you'll make; right?

25                  A. That's true.

1 Q. So, none of that stuff goes to the  
2 under 5 megs?

3 A. It's included in the purchase rate  
4 negotiation.

5 Q. For over 5 megs it's included in the  
6 purchase rate negotiation; correct?

7 A. And those wishing to negotiate the  
8 contract.

9 Q. Sorry, I don't understand. Try me  
10 again on that answer.

11 A. We have a standard rate package for  
12 projects under 5 megawatts that are available to all  
13 projects of that size. If a developer wishes to  
14 negotiate a contract that's outside of that, we are  
15 willing to accept it.

16 Q. Oh, yes, of course and in fact they  
17 have to do that if they want financial assistance;  
18 right?

19 A. Yes.

20 Q. They have to negotiate a specific  
21 contract?

22 A. Yes.

23 Q. However long it takes and however  
24 much it costs?

25 A. It's his choice.

1                   Q. Okay. If they want access to  
2 financial assistance, it's not their choice though;  
3 right?

4                   A. We access the project to determine if  
5 we will offer financial assistance and assess its  
6 merits.

7                   Q. Now, my question is: Can you combine  
8 the standard rates so you don't have to negotiate all  
9 this stuff and financial assistance?

10                  A. No, you can't.

11                  [12:29 p.m.]

12                  Q. You must have a negotiated contract,  
13 correct?

14                  A. Yes.

15                  Q. Okay. Let's see if we can go on and  
16 get through this. Better resource utilization. Now,  
17 you expanded upon that earlier. That is fuel diversity  
18 and things like that, or is it efficiency?

19                  A. It is probably a combination of all  
20 of those because the other thing that we are looking at  
21 is taking all the resources that are out there, whether  
22 it is small hydro, whether it is wood waste, whether it  
23 is - whatever the fuels are, and better utilizing all  
24 those resources that are available for the production  
25 of electricity. And the non-utility generator would

1 typically be able to use some of those whereas Ontario  
2 Hydro would not be moving in that direction.

3 Q. Is fuel and technology diversity part  
4 of that?

5 A. I would think so.

6 Q. Now, your NUG plan is very heavily  
7 dependent on natural gas, isn't it?

8 A. It is.

9 Q. Are we talking something in the  
10 neighborhood of 90 per cent of the generation is  
11 expected to be natural gas fueled or 85?

12 A. 90 per cent of the cogeneration was  
13 determined.

14 Q. No. I am talking the 3100 number,  
15 right?

16 MR. VYROSTKO: A. I think it is about 70  
17 per cent in total.

18 Q. 70 per cent of the 3100 is fueled by  
19 natural gas?

20 A. Yes.

21 Q. Okay. That doesn't sound like very  
22 much diversity.

23 Is that what you mean by diversity, that  
24 you are getting natural gas now onto the system?

25 A. Well, again, if we are looking at

1 diversity, we talking diversity in the scheme of the  
2 entire generation mix in the province and natural gas  
3 generation provides diversity with the other supply  
4 fuels that are currently being used.

5 Q. Wouldn't you have better diversity if  
6 you had a broader range of technology and a broader  
7 supply mix within the NUG plan?

8 A. Yes, possibly.

9 Q. Would that be an advantage to Ontario  
10 Hydro?

11 A. Again, it may; it also may not,  
12 depending on which ones they are and the longevity of  
13 those fuels and all of the other potential  
14 disadvantages of non-utility generation. I think that,  
15 yes, more diversity is good in a generic sense.

16 Q. What concrete actions, if any, are  
17 you currently taking or planning to take to attempt to  
18 ensure that the independent power option has a broader  
19 range of technologies and a more balanced supply mix?

20 A. Well, I think Mr. Brown mentioned  
21 that in his evidence yesterday. We have an initiative  
22 that we are undertaking to pursue alternate  
23 technologies.

24 Q. Okay. Is that the only step you are  
25 taking to increase diversity?

1                   A. The other step is to - we are taking  
2 an initiative to work with Ministry of Natural  
3 Resources to facilitate hydraulic site releases so that  
4 we can possibly have more opportunities for small hydro  
5 projects.

6                   At the same time, we have also assisted  
7 in the funding of class EA by the Water Power  
8 Association again to help to facilitate more small  
9 hydro projects.

10                  Q. Is that consistent with your plan  
11 continuing to drop its projection of small hydro?

12                  A. The plan reflects project activity  
13 and future industry trends. And currently, the  
14 industry trends are that we are getting less projects  
15 being developed as a result of the issues that are out  
16 there with site release permitting and all of that.

17                  What we are trying to do is reverse that  
18 trend with some of these initiatives. Whether that  
19 happens or not, I don't know. We will see if some of  
20 that occurs and then in our next year's forecast, we  
21 will start to record those changes.

22                  Q. The NUG plan, whether it is '90 or  
23 '91 or whatever, the NUG plan is your forecast of what  
24 you expect to happen in the future, isn't it?

25                  MR. BROWN: A. Yes, it is.

1                   Q. So, as of right now, you don't expect  
2 any of these actions you are taking, class EA, MNR site  
3 release, to increase the amount of small hydro  
4 available to in Ontario Hydro; is that true?

5                   A. The forecast is based on what we  
6 think the industry is going to happen under current  
7 situations as reflected in project activity and we are  
8 doing our initiatives to make sure that there's minimum  
9 barriers in this industry, and my forecast has an  
10 element of that in it.

11                  Q. Sorry, your forecast is assuming that  
12 you will have some impact?

13                  A. Yes.

14                  Q. So, it would be a lot worse or a bit  
15 worse?

16                  A. It could possibly be less.

17                  Q. Okay. Are those all of the actions  
18 you are taking to improve supply mix and diversity?

19                  A. We have done special studies at our  
20 research centre from time to time on different  
21 technologies; as the example of burning rubber tires.

22                  Q. Okay. You aren't actually projecting  
23 an increase of diversity in your current forecast, are  
24 you? If you take a look at where you are getting the  
25 NUGs from on a percentage basis, say, isn't it correct

1 to say that the natural gas percentage is going up as a  
2 percentage of the total?

3 A. In reference to the 3100, that is  
4 true.

5 Q. The last one of these benefits  
6 here -- oh, no, we have got -- hold on a second. Now,  
7 we have got more. Oh, this is wonderful.

8 The last one of these benefits is  
9 improved energy efficiency and you are referring to  
10 cogen there, aren't you?

11 MR. VYROSTKO: A. Predominantly, that is  
12 correct.

13 Q. And that is because of the improved  
14 conversion efficiency which we heard you talk about  
15 yesterday?

16 A. That's correct.

17 Q. Do you also find the companies that  
18 cogenenerate are more likely to introduce demand  
19 management measures into their operations?

20 A. I can't answer that.

21 Q. Well, isn't that something that  
22 should be important to you in terms of efficient  
23 delivery of programs, both demand management programs  
24 and NUG programs?

25 A. I think it is important to the people

1 who, in fact, have the interface with the customer  
2 which is our regional customer service people  
3 because --

4 Q. But it is not important to you in  
5 terms of program design or forecasting or anything like  
6 that?

7 A. Currently, my mind focuses on the  
8 non-utility generation program.

9 Q. Okay. Do you have a knowledge of  
10 demand management branch programs that might be used to  
11 support cogen as well?

12 MR. BROWN: A. We have a general  
13 knowledge. And one of the programs they offer is on  
14 high-efficiency motors and we provide information to  
15 NUG proponents of that information.

16 Q. And, of course, the audit program,  
17 this government audit program, also is a combined  
18 thing, isn't it?

19 A. Yes, it is.

20 Q. But aside from that, if they are  
21 going out and - that is, the demand management people -  
22 if they are going out and selling demand management,  
23 you don't have some arrangement with them that they  
24 will sell cogen, too -- market it, encourage it?

25 A. Our representatives represent the

1 customer of Ontario Hydro and they are not pushing  
2 demand management or NUGs separately. There are no two  
3 independent people. It is one person representing  
4 Ontario Hydro talking to that customer.

5 They are trained in cogeneration. They  
6 are trained in demand management and when they approach  
7 a customer, they have both of those options in their  
8 back pocket.

9 Q. So, they will have a program to  
10 encourage demand management over here and they will  
11 have a program to encourage cogeneration over here and  
12 they will sell both of them?

13 A. They work with a customer to  
14 determine which is viable for his operation.

15 Q. You don't have any joint programs  
16 with the demand management branch?

17 A. You already mentioned the government  
18 audit program.

19 Q. Except for that one?

20 A. We have a turbo expander program.

21 Q. A turbo expander program? I heard  
22 you describe what those were yesterday. I didn't hear  
23 you talk about a program. Maybe I just missed it.

24 A. As a temporary measure, they are  
25 looking after load displacement turbo expanders for

1           that.

2                   THE CHAIRMAN: I am sorry, I didn't hear  
3           that.

4                   MR. BROWN: In the short term, they are  
5           looking at interfacing with the customer in developing  
6           load displacement turbo expanders and then are coming  
7           back to us with that.

8                   MR. SHEPHERD: Q. All right. So, it is  
9           part of one of their programs just for convenience?

10                  MR. BROWN: A. Just for now, that is  
11           correct.

12                  Q. Yes, just for now. It is really  
13           cogen, so it is really NUGs so--

14                  A. Yes.

15                  Q. --they can't have it in the end?

16                  A. Well, we are working on our own.

17                  Q. All right. Isn't it true, Mr.  
18           Vyrostko, that the NUG division and demand management  
19           branch often see each other as competitors?

20                  MR. VYROSTKO: A. No. In general, I  
21           don't think we see ourselves as competitors because  
22           their focus is on programs that use energy and our  
23           program is aimed at people who generate electricity.

24                  Q. Okay. Well, perhaps we should look  
25           then at small package cogen.

1                   Can you describe what small package cogen  
2                   is?

3                   A. To us, small package cogen is a  
4                   cogeneration system that you can virtually buy off the  
5                   shelf. There is the equipment that manufacturers would  
6                   sell in standard sizes and you would just buy the  
7                   entire piece of equipment and put it into an  
8                   installation. And small is because they are typically  
9                   under one megawatt.

10                  Q. There is a very big contrast with the  
11                  sort of 50 or 100 or 200 megawatt cogen you see in  
12                  industrial; right?

13                  A. That is correct.

14                  Q. Am I not right, Mr. Vyrostko, in  
15                  saying that in the spring of 1990, the demand  
16                  management branch let it be known to you and to others  
17                  that small package cogen would be included in their  
18                  savings by design program and incentives totalling \$700  
19                  per kilowatt would be given to developers?

20                  A. That is correct, they initially  
21                  designed their program that way.

22                  Q. And isn't it true that the demand  
23                  management branch was prevented from proceeding with  
24                  that when NUG division objected that cogen is cogen and  
25                  it should be within the NUG division?

1                   A. Well, it partly was an objection on  
2 our part, but it was basically a definition within the  
3 corporation.

4                   Q. It had to be resolved, right, who was  
5 going to deal with it?

6                   A. Yes, that is correct.

7                   Q. You are not offering \$700 a kilowatt  
8 for small package cogen, are you?

9                   A. I don't think we are.

10                  Q. Are you offering an incentive?

11                  A. Mr. Brown talked about a program that  
12 we are looking at with regard to a small package cogen.

13                  Q. Which will have some incentives  
14 presumably?

15                  A. We are still in the draft stage, but  
16 I would suspect we will be doing something to see  
17 whether we can stimulate the small package cogen  
18 program.

19                  Q. But it is not going to be anything  
20 like \$700 a kilowatt, is it?

21                  A. I think it is too early to say yet  
22 what level of activity or incentives there might be in  
23 that program.

24                  Q. Well, I heard your evidence yesterday  
25 to be that when you calculate whatever incentives you

1 can give, your internal rules in NUG division are  
2 avoided cost less lost revenues, and whatever is left  
3 over is what you can play with in terms of incentives;  
4 isn't that right?

5                   A. For a load displacement project, that  
6 is correct.

7                   Q. And small package cogen is no --

8                   THE CHAIRMAN: Avoided cost less?

9                   MR. SHEPHERD: Less lost revenues to  
10 Hydro.

11                  Q. The customer is saving on their  
12 electricity bill, right?

13                  MR. VYROSTKO: A. That is correct.

14                  Q. And small package cogen is almost  
15 exclusively load displacement, isn't it, almost?

16                  A. Typically, it would be load  
17 displacement.

18                  Q. So, your maximum incentive then is  
19 going to be that difference, right?

20                  A. Yes, that is correct.

21                  Q. Maybe you don't know the answer to  
22 this, but isn't it true that the demand management  
23 branch when they do the calculation, they don't deduct  
24 the savings on the electricity bill, do they, when they  
25 calculate what incentives they can pay?

1                   A. Well, I am not totally familiar with  
2                   all the elements that demand management have in their  
3                   programs, so I can't quite speak to specifically what  
4                   is in there.

5                   THE CHAIRMAN: Well, Mr. Campbell, that  
6                   is the evidence of the demand management panel, that  
7                   they don't think make that deduction?

8                   MR. B. CAMPBELL: That's right. I don't  
9                   have any dispute with that.

10                  MR. SHEPHERD: Q. Mr. Vyrostko, do you  
11                  know what the no losers test is?

12                  MR. VYROSTKO: A. Yes, I do.

13                  Q. Isn't your method of calculating  
14                  incentives for things like small package cogen the no  
15                  losers test?

16                  A. It could be termed as the no losers  
17                  test, that is correct.

18                  Q. And hasn't Hydro taken a policy  
19                  position in demand management cases that the no losers  
20                  test is inappropriate and shouldn't be used?

21                  MR. B. CAMPBELL: Yes, that is correct.  
22                  That is the evidence of Panel 4.

23                  MR. SHEPHERD: Q. But that doesn't apply  
24                  to small package cogen?

25                  MR. VYROSTKO: A. No, it doesn't.

1                   Q. Let's see if we can get through the  
2 rest of this stuff before lunch.

3                   On the next page you talk about better  
4 use of waste fluids and garbage disposal as being  
5 benefits of non-utility generation.

6                   And those are obviously technology  
7 specific things, right?

8                   A. That is correct.

9                   Q. We don't need to go into those.

10          Then you talk about local economic development.

11          What does that include in your mind? How  
12 is that a benefit?

13          A. Well, I think that from our  
14 perspective, if a project were to locate in a  
15 community, then there is some benefits to that local  
16 community and that benefit is there whether, in  
17 essence, it is a non-utility generator or even the  
18 utility plant.

19          [12:45 p.m.]

20          Any time activity construction or a new  
21 plant goes into a community there is some benefit  
22 there. And so this is a generic issue. Now, that can  
23 apply to a utility or a non-utility generation project.

24          Q. Well, I was looking at all these  
25 benefits and all the benefits I see look like they are

1 comparing non-utility generation to utility generation.

2 This one is different?

3 A. I guess when I put these together, I  
4 didn't necessarily see those as specifically with  
5 non-utility generation. I saw that these are some of  
6 the benefits of generation generically.

7 Q. Lower capital and financing costs is  
8 utility generation as well? Lower compared to what,  
9 Mr. Vyrosto.

10 A. As I said, I said generically these  
11 can be applied to utility as well as non-utility  
12 generation.

13 Now, if you take the lower capital and  
14 financing costs, and clearly that one applies  
15 specifically to non-utility generation.

16 Q. And reduced risk, isn't that a  
17 comparison between the risk you have in a NUG project  
18 and in utility?

19 A. Yes, that's correct.

20 Q. And better resource utilization,  
21 isn't that the same thing, diversity?

22 A. No, because, for instance, better  
23 resource utilization and/or waste fuels, if a utility  
24 were to, in fact, select that technology, those  
25 benefits would be there for the utility as well.

1 Q. Isn't it your evidence that utilities  
2 like Ontario Hydro don't select that technology and  
3 couldn't?

4 A. Typically they don't.

5 Q. Don't, all right.

6 However, do I understand then that you  
7 view the benefits, local economic development benefits  
8 of NUGs as being basically the same as utility  
9 projects, comparable roughly?

10 A. I guess what I am saying is that if a  
11 utility were to go into a community to do a project,  
12 there would be economic developments and opportunities  
13 and benefits to the local community. Labour would be  
14 coming in and different things, and that would be a  
15 benefit.

16 So, if a NUG goes into a community, then  
17 they also provide that same type of local benefit.

18 Q. So, the benefit of local economic  
19 development, that's not an incremental benefit of  
20 non-utility generation as opposed to utility  
21 generation?

22 A. Yes, I don't think so. I think  
23 that's more talking about the fact that with  
24 non-utility generators, they tend to be going back to  
25 another point. They are dispersed and so therefore

1 more communities get an opportunity to have some local  
2 economic development.

3 Q. Now, when you in your actual speech,  
4 this was a speech you were giving in which you used  
5 these slides, in your actual speech you didn't include  
6 in the term local economic development any benefit or  
7 advantage from local ownership or control of resources,  
8 did you?

9 A. Can you repeat that or rephrase that  
10 question?

11 Q. When you gave the speech, or indeed  
12 now when you described what you meant by it, you didn't  
13 include in local economic development any benefit with  
14 respect to local ownership or control of resources, did  
15 you?

16 A. I didn't specify that right now, no,  
17 I didn't.

18 Q. And you didn't specify that in the  
19 special either, did you?

20 A. I may not have.

21 Q. Do you believe that local ownership  
22 and the control of resources is a benefit to the people  
23 of Ontario?

24 A. It could be a benefit.

25 Q. However, when you look at proposed

1 projects, you don't give any advantage or preference or  
2 anything else to projects that are controlled by local  
3 residents or owned by local residents or have  
4 guarantees of local jobs or anything like that, do you?

5 A. No, we do not.

6 Q. So, if First Nation comes to you with  
7 a project proposal, you don't see any extra benefit  
8 there that you should recognize?

9 A. We haven't to date.

10 Q. Finally here you talk about public  
11 and government support. I take that to be sort of a  
12 public relations benefit; that is, if the public and  
13 the government support this, then Ontario Hydro will be  
14 being a good corporate citizen; is that about it?

15 A. No, I don't think so.

16 Q. What does it mean then?

17 A. In direct evidence yesterday both Mr.  
18 Snelson and myself discussed the information that went  
19 into development of the demand supply strategy. The  
20 first element of that was the demand/supply option  
21 study, and that's where Ontario Hydro, as they were  
22 looking at developing a long-term plan, went around the  
23 province to see whether in fact people were interested  
24 in Hydro doing more than just major supply, and looking  
25 at whether we should be looking at other options. At

1       that time most of the public there, whether it was  
2       industry, whether it was utility, whether it was the  
3       general public, talked about the fact that renewable  
4       resources and cogeneration was a preferred option and  
5       something that they would support in pursuing.

6                     Q. Well, I guess what I am trying to get  
7       at is, why does Hydro perceive that to be a benefit.  
8       It's more than public relations then.

9                     A. That goes back to all of these other  
10      things that we talked about with respect to using  
11      renewable resources and cogeneration, the efficiency,  
12      the fact that you are in fact taking some resources  
13      that are not being used otherwise and somebody comes  
14      along and uses them, and typically it would be somebody  
15      else because Hydro wouldn't come in and develop small  
16      sites, typically they wouldn't go into using wood waste  
17      as development and they wouldn't go into a steam host.

18                    Q. And when you are talking about these  
19      benefits, you were talking to the municipals; right?  
20      Were you trying to send a message to them that these  
21      were benefits to them as well or benefits that were  
22      somehow good for them?

23                   A. Well, I was just trying to again  
24      raise their awareness of an understanding of what  
25      non-utility generation is all about.

1                   This presentation that you are referring  
2                   to I also made to other people who are not municipal  
3                   utilities. So, in essence, we have talked about the  
4                   generic benefits that non-utility generation brings,  
5                   and so, that's the context that I was talking about.  
6                   It wasn't necessarily at this stage focused to the  
7                   municipal utilities.

8                   Q. It's interesting.

9                   So, the other places where you speak  
10                  would be like members of the public, people with less  
11                  involvement in the electricity industry, typically?

12                  A. They might be more. For instance, I  
13                  may have given this at one IPPSO conference.

14                  Q. Oh, no, I would remember. (laughter)

15                  Just the last thing on the benefits, I  
16                  think it is the last thing, it's not a promise. The  
17                  last thing on the benefits, I was surprised that in  
18                  your slides, and I looked all through them, and then I  
19                  asked some people who were there about your actual  
20                  speech and they confirmed it, you didn't talk about any  
21                  of the many environmental benefits of independent  
22                  power, emission reductions, nuclear waste disposal,  
23                  transmission impacts, da-da-da-da-da. Did you not  
24                  think that that was -- I assume you think those are  
25                  benefits of independent power; is that true?

1                   A. Non-utility generation does bring  
2         environmental benefits.

3                   Q. Did you not think that this would be  
4         important to the municipal utilities, the environmental  
5         benefits?

6                   A. Partly I would have referenced that  
7         in the better use of waste fluids and garbage disposal,  
8         that the advantage of that, it does help the  
9         environment, with respect to, for instance, wood waste  
10       not being necessary landfilled but in fact there is  
11       clean burn of that.

12                  I would have thought I would have said  
13         that when I was giving this presentation.

14                  Q. So you would have gone through the  
15         list of environmental benefits then, of the major  
16         environmental benefits of independent power, you would  
17         have gone through that in this speech?

18                  A. I can't say whether they would major  
19         or the majority, but I think I would have said some of  
20         them.

21                  Q. The purpose of your MEA speech was to  
22         in effect sell the concept of independent power and  
23         heighten awareness and acceptance of it?

24                  A. It was to, in fact, inform the  
25         utilities about the value of non-utility generation and

1 to elicit their support in recognizing it down the  
2 road.

3 Q. Is it fair to say that there is no  
4 particular emphasize here on environmental benefits as  
5 part of that selling job?

6 A. There may not be, but that's not  
7 because there wasn't any intention to be.

8 Q. In terms of dealing with the  
9 municipals, is it fair to conclude that they are going  
10 to be more concerned with economic and system issues  
11 than they are with environmental issues from their  
12 perspective?

13 A. I can't say that. A lot of the  
14 utility people who were there were elected  
15 commissioners. I think those elected commissioners are  
16 very sensitive to the local community and I would think  
17 that they would be quite aware of some of the issue  
18 from an environmental perspective with that local  
19 community.

20 Q. Okay. Just before I leave this, you  
21 don't refer here to things like broadening local tax  
22 bases or system balancing benefits, or energy security  
23 benefits, or any of those sorts of things. Is that  
24 just because you had to make the list shorter?

25 A. Again, this was not an exhaustive

1 list.

2 Q. It's not that you don't believe those  
3 are benefits?

4 A. That's correct. In specific  
5 situations they could be benefits.

6 Q. Okay. Actually, there is one other  
7 benefit here. If you can just go down, go a couple of  
8 pages on, you have a page that's headed up,  
9 "Reliability of NUGs", and you go on to talk about why  
10 NUGs are so reliable, and you say they are at least as  
11 reliable as Hydro's. I assume that means Hydro's  
12 generation; right?

13 A. Typically.

14 Q. Now, I understood your evidence  
15 yesterday to be - and I haven't found it in the  
16 transcript but I will if you want me to - I understood  
17 your evidence yesterday to be that you thought that was  
18 one of the problems with NUGs, is reliability?

19 A. I think that if we looked at some of  
20 the advantages of non-utility generation, you can,  
21 depending on the circumstance, see some of those  
22 advantages becoming disadvantages. As an example, as I  
23 mentioned yesterday, burning garbage is an advantage as  
24 a NUG, but yet here in the province today it's not an  
25 advantage, it's a disadvantage because of the

1 perception of burning garbage and what it creates.

2 So again, I think that in any given point  
3 in time, some advantages may be disadvantages depending  
4 on the situation.

5 Q. Do you think reliability is in  
6 general an advantage of NUGs or a concern?

7 A. I think the jury is out with respect  
8 to that on all technologies. In some technologies, I  
9 think we can say that it's using the same technology  
10 and the same equipment as any utility would, so  
11 typically it should be the same as a utility.

12 There are other places where there is  
13 technology that's fairly new and so there it's not  
14 proven. So the jury would be out on that new  
15 technology.

16 Q. So the same or less, the same or less  
17 reliability than the utility; is that what you are  
18 saying?

19 A. Typically that's correct.

20 Q. So all of these things, small  
21 projects so less impact if one fails, profit  
22 motivation, high operating reliability of gas turbines,  
23 those don't represent greater reliability of NUGs than  
24 utility projects?

25 A. No. What this transparency or this

1 slide or page is trying to show when I was talking to  
2 the industry, to the utilities, was that the  
3 non-utility generation is not an unknown activity or  
4 unknown opportunity, that there is non-utility  
5 generation in the province, in the world really, and  
6 that they have and use the same type of equipment as  
7 utilities use, and they, because of the fact that they  
8 have a bottom line revenue requirement, they would  
9 operate that in a reasonable way. And the bottom line  
10 message was that therefore these non-utility generators  
11 would be no different typically than utility supply.

12 Q. Isn't it true, Mr. Vyrostko, that if  
13 you look at all of the NUGs in any of the major NUG  
14 jurisdictions in United States, California,  
15 Massachusetts, whatever, and you measured their  
16 reliability by any of the major reliability standards,  
17 that that reliability will be better not only than  
18 Hydro's nuclear stations but all of Hydro's fossils  
19 stations; isn't that in fact true?

20 A. I understand that there are some  
21 areas in, for instance, the United States that have  
22 natural gas-fired projects operating at very high  
23 reliability, which typically would be higher than the  
24 average utility plant.

25 Q. Is it true that the reliability of

1 all NUGs of all technology taken as an average in  
2 California where they have 10,000 megawatts of NUGs,  
3 isn't it true that that reliability far exceeds your  
4 nuclear reliabilities or your fossil reliability?

5 [1:00 p.m.]

6 A. I can't answer that. I don't know  
7 that.

8 Q. Mr. Snelson, do you know whether  
9 that's true?

10 MR. SNELSON: A. I don't know whether  
11 that's true.

12 Q. I just have one other question on  
13 that. Mr. Vyrostko, you don't know the answer to that  
14 reliability comparison; right?

15 MR. VYROSTKO: A. No, I don't.

16 Q. Is it true that it was on your  
17 recommendation that Ontario Hydro uses an 80 per cent  
18 reliability factor to model NUGS?

19 A. On the division's recommendation,  
20 that's correct.

21 Q. The division that you had?

22 A. That's correct.

23 Q. But you don't know what the  
24 comparative reliability of NUGS in the United States  
25 is?

1                   MR. BROWN: A. I might add, there's very  
2                   little data in North America on NUGS over the long  
3                   term.

4                   Reliability data that's been obtained to  
5                   date has been very sporadic or generic. We are trying  
6                   to get more data to improve that estimate, either  
7                   outside or inside, and the more information we have,  
8                   the better we can refine that estimate, but to date the  
9                   information we have received has supported that number.

10                  Q. But you had enough to come up with an  
11                  80 per cent number at some point?

12                  A. Yes.

13                  Q. Was that just a guess; is that what  
14                  you're saying?

15                  A. No, it's not a guess. There is  
16                  information available, but it's very limited.

17                  MR. SHEPHERD: Mr. Chairman, that might  
18                  be a good time for the lunch break.

19                  THE CHAIRMAN: We will adjourn until  
20                  2:30.

21                  THE REGISTRAR: This hearing will adjourn  
22                  until 2:30.

23                  ---Luncheon recess at 1:02 p.m.

24                  ---On resuming at 2:35 p.m.

25                  THE REGISTRAR: Please come to order.

1 This hearing is again in session. Be seated, please.

2 THE CHAIRMAN: Mr. Shepherd?

3 MR. SHEPHERD: Q. When we left off we  
4 had just finished discussing this reliability question.

5 Mr. Brown, you said that there was an  
6 analysis that you got to that 80 per cent number. I  
7 looked around, and I'm just going to ask you to turn to  
8 Interrogatory 5.14.33.

9 Do you have that there? It should be --

10 Mr. Chairman, I've provided a package of  
11 interrogatories for each member of the Board which I  
12 haven't given an exhibit number to, of course, but they  
13 are in numerical order so you should be able to follow,  
14 just for convenience.

15 THE CHAIRMAN: Which one are we looking  
16 at now, please?

17 MR. SHEPHERD: 5.14.33.

18 Q. And the one I'm looking at is marked  
19 revision.

20 MR. BROWN: A. Okay.

21 Q. Now, Mr. Brown --

22 THE CHAIRMAN: Before we go on, has this  
23 been already mentioned. I think something like it has  
24 been mentioned, but whether it's 233, I don't know.

25 MR. SHEPHERD: I don't think so, Mr.

1 Chairman. I think 233 was mentioned, but I don't think  
2 33 was.

3 THE CHAIRMAN: You don't think so.

4 THE REGISTRAR: Then that would be 321.9.

5 THE CHAIRMAN: Thank you.

6 ---EXHIBIT NO. 321.9: Interrogatory No. 5.14.33.

7 MR. SHEPHERD: Q. Mr. Brown, does this  
8 constitute the full extent of your analysis that led  
9 you to the 80 per cent reliability number?

10 MR. BROWN: A. This is our report that  
11 was used as input to the reliability indices forecast.

12 Q. Do you have any other material or any  
13 other analysis besides this that leads you to the 80  
14 per cent number?

15 A. Not at the time this was done.

16 Q. Do you now subsequently have further  
17 information?

18 A. We are working on collecting this  
19 data.

20 Q. So you don't have any summary of it  
21 or anything that we could see?

22 A. I can give some generic information  
23 for the year 1980 for NUG results in Ontario.

24 Q. All right. Is that in a written form  
25 of some sort? I don't want to take up time in --

1 A. I can give you the numbers.

2 Q. Okay.

3 A. What would you like?

4 Q. Tell me what you've got.

5 A. I have capacity factor.

6 THE CHAIRMAN: Mr. Brown will learn as  
7 this panel goes on that you never give the questioner  
8 choices.

9 MR. BROWN: For the year 1990, NUG  
10 purchase facilities in Ontario hydraulic, the average  
11 capacity factor for all purchased hydraulic, 48 per  
12 cent; cogeneration, 43 per cent; other thermal, 45 per  
13 cent.

14 MR. SHEPHERD: Q. Boy, those are a lot  
15 lower than your 80 per cent. Do you know why that is?

16 MR. BROWN: A. We are still trying to  
17 find out. There's a lot of teething problems in the  
18 cogeneration. These are, for the cogeneration, very  
19 new facilities.

20 DR. CONNELL: Could you explain what  
21 those numbers are. Are those weighted averages?

22 MR. BROWN: It's weighted by megawatts,  
23 it's also the average energy of the year divided by the  
24 capacity of each facility.

25 DR. CONNELL: And that would be the sum

1 of all relevant projects in each category for the  
2 entire province?

3 MR. BROWN: Yes.

4 DR. CONNELL: Would it include only those  
5 that were operational at the beginning of the year?

6 MR. BROWN: No, it includes those that  
7 came in-service during 1980 and that was --

8 DR. CONNELL: So you would incorporate a  
9 partial figure then?

10 MR. BROWN: Yes.

11 MR. SHEPHERD: Q. Does it include the  
12 shakedown period for new facilities? New facilities  
13 have a shakedown period before they're operating  
14 properly; right?

15 MR. BROWN: A. As soon as they go  
16 in-service they're incorporated.

17 Q. Okay. Does this include the old  
18 NUGS, the historical NUGS?

19 A. No, we are working on trying to get  
20 that information. That will be forward looking. I  
21 don't have anything for the past.

22 Q. You don't have any past data on what  
23 sort of performance the historical NUGS have had?

24 A. I have information that was published  
25 in a 1989 NUG plan on the capacity factor of those

1 facilities.

2 Q. Okay. I'm just trying to understand  
3 why these numbers are so low. The cogen number which  
4 is, I guess, the most surprising of them, now that's  
5 heavily influenced by the two northern power projects  
6 which were having shakedown problems; right?

7 A. I don't comment on specific  
8 information, but those aren't even in that category,  
9 they're not cogeneration projects.

10 Q. The Cochrane and Kirkland Lake  
11 projects are not considered cogen?

12 A. They're wood waste, which is other  
13 thermal.

14 Q. Oh, okay. So then the other thermal  
15 number is going to be influenced by their teething  
16 problems?

17 A. Yes, if there were such.

18 Q. Is it true that something in the  
19 order of 80 or 90 per cent of your other thermal last  
20 year was those two projects?

21 A. That information I don't have.

22 Q. Could you give me a ballpark? We're  
23 talking about big projects; right, it's not like you  
24 didn't notice them?

25 A. No, I'm fully aware of those two

1 projects.

2 Q. Okay. And are they a very large  
3 percentage of your total?

4 A. Yes, they are.

5 Q. One other thing. Do you expect to  
6 have a report on the reliability data you're  
7 collecting? Do you expect to do some sort of report on  
8 it?

9 A. That's my objective for the year  
10 1991.

11 Q. Can we have an undertaking to file  
12 that when it's done?

13 A. Just so you know the time frame, we  
14 do not get the data until about three months after the  
15 fact. So it's not going to be until May of next -- or  
16 April -- sorry, May/June of next year.

17 THE CHAIRMAN: Is there a current -  
18 perhaps I'm coming in late because I couldn't find my  
19 interrogatory - is there a current report of this  
20 nature now?

21 MR. BROWN: No, there isn't.

22 MR. SHEPHERD: Q. So may I have an  
23 undertaking then to provide that when it is available?

24 THE REGISTRAR: 322.2.

25 MR. BROWN: That's no problem. I hope to

1 make it public to other people as well.

2 MR. SHEPHERD: Good.

3 THE REGISTRAR: 322.2.

4 THE CHAIRMAN: 322.2.

5 ---UNDERTAKING NO. 322.2: Ontario Hydro undertakes to  
6 provide a report on reliability data.

7 MR. SHEPHERD: Q. At this preliminary  
8 stage, Mr. Brown, given you're in the middle of writing  
9 the 1990 NUG plan now; right?

10 MR. BROWN: A. That's correct.

11 Q. Well, not exactly right now, but at  
12 this time?

13 A. I hope to later.

14 Q. Yes. Can we expect your generic  
15 estimates of reliability to go down as a result of this  
16 preliminary information?

17 A. There is not enough evidence to  
18 support that.

19 Q. So you're going to stay at 80 per  
20 cent?

21 A. Yes.

22 Q. We were still talking about this  
23 slide show. This isn't about the benefits, but I just  
24 want to ask you, Mr. Vyrosto, if you can take a  
25 look -- we were on the reliability page, the

1 immediately preceding page is a slide that says  
2 Concerns and you, in fact, talked about some concerns  
3 yesterday in your direct evidence.

4 Just taking them in order, perhaps you  
5 could briefly explain what you mean by project  
6 uncertainty?

7 MR. VYROSTKO: A. I think in terms of  
8 the first one we're really looking at whether the  
9 project will last for the contract period, whether it  
10 be twenty years, forty years or fifty years.

11 We don't have enough information on the  
12 NUGS that we have to suggest that they will be there  
13 and we can count on them for the entire period and  
14 that, in fact, they will perform as expected as well  
15 for the entire period.

16 So I think what we're saying is that  
17 right now there is uncertainty with regard to long  
18 term.

19 Q. How is that different from  
20 operational uncertainty, then?

21 A. Well, the operational, for instance,  
22 in terms of what they perform at, for instance, if the  
23 project comes in and says we've got a project here at  
24 20 megawatts and we're going to have "x" amount of  
25 kilowatthours and winter peak and summer peak and, for

1 instance, we don't know whether in fact they will  
2 operate in that way, and because the pricing is  
3 determined by the production of the facility, you  
4 obviously are expecting them to live up to the way they  
5 said they were going to operate.

6 In addition to that slide on the  
7 operational is, if they have a maintenance schedule for  
8 the project, such that the annual operation will be, in  
9 fact, continued through effective operation and  
10 effective maintenance, and so one of the things that  
11 you're looking for is them to say up front that they've  
12 got a maintenance schedule and then, secondly, whether  
13 in fact they will live up to that maintenance schedule  
14 to protect the integrity of the annual operation they  
15 said they would have.

16 Q. That sounds very similar to project  
17 uncertainty; is it?

18 A. Well it maybe. They could be one in  
19 the same.

20 Q. Okay. You have no concern then with  
21 the sort of once it's committed will it actually be  
22 built type of uncertainty; is that a concern for you?

23 A. Well, typically that's not a concern  
24 because all of the risks are -- and there are no front  
25 end payments from our perspective, so if the developer

1 makes a choice to go ahead and build and doesn't build,  
2 then the risk that we've lost is if we were, for that  
3 period of time, starting whenever the project starts,  
4 we were counting heavily on that amount of megawatts  
5 and megawatthours.

6 Q. Well, you just signed up a 350  
7 megawatt deal. If that one doesn't come through, then  
8 you're stuck; aren't you?

9 A. Well, first of all, I would like to  
10 clarify something. It's not a signed up deal, it's not  
11 a committed project at all.

12 Q. You agreed to the rate and the price  
13 terms?

14 A. Yes, we have agreed to -- they have  
15 agreed to the rates. Our executive office haven't  
16 agreed to them yet.

17 Q. Well, you offered the rates; didn't  
18 you?

19 A. Yes.

20 Q. And they agreed to them?

21 A. Yes.

22 Q. But it's not a deal yet?

23 A. I don't represent the executive  
24 office in all situations.

25 Q. All right. Anyway, if that one

1 doesn't go ahead, that's a 1994 or something start;  
2 right, so if that one doesn't go ahead, don't you have  
3 a problem?

4                   A. Yes, or we have an opportunity for  
5 finding other NUGS to fill that hole.

6                   Q. Isn't it true though, Mr. Vyrostko,  
7 that the history of NUG development in North America is  
8 that from the point of commitment, from the point when  
9 there's a deal, it's very rare that projects don't go  
10 ahead; right?

11                  A. That's not what my information would  
12 suggest.

13                  Q. You think the opposite is true?

14                  A. I think that there are experiences in  
15 the United States that show a number of projects did  
16 not, in fact, materialize even after they were  
17 committed.

18 [2:47 p.m.]

19                  Q. Okay. So, the reason why you are not  
20 concerned about whether it will show up is because if  
21 it doesn't show up, you will be able to fill it with  
22 other NUGS?

23                  A. That is one of the expectations. And  
24 secondly is that it hasn't cost either the utility or  
25 anybody in the province anything because there hasn't

1       been any funds released from our perspective.

2                   Q. The other sort of upfront uncertainty  
3       that is often the case with the utility facilities is  
4       how much it is going to cost. You don't have that with  
5       NUGs; is that right?

6                   A. How much is --

7                   Q. You built Darlington and you thought  
8       it was going to cost so much; it cost a little more.

9                   That doesn't happen with NUGs, right?

10                  A. That is the risk off-loading we are  
11       talking about.

12                  Q. Well, exactly. So, that is an  
13       uncertainty you no longer have with NUGs?

14                  A. That's correct.

15                  Q. Is it also typically true that if NUG  
16       projects experience delays, they are shorter and have  
17       less impact on you than utility-owned projects?

18                  A. I don't understand the question.

19                  Q. Darlington had a delay of twelve  
20       years?

21                  A. Right.

22                  Q. NUG projects don't have twelve year  
23       delays, do they?

24                  A. Typically, I haven't seen any NUG  
25       that has a twelve year delay, no. (laughter)

1                   Q. In fact, is it fair to say that  
2    delays in NUG projects when they do happen, which isn't  
3    that often -- perhaps let me stop there.

4                   Is it fair to say that NUG projects don't  
5    have as many delays as utility projects in general?

6                   A. Again, I can't answer that because in  
7    the short period that we have been dealing with the  
8    business here, we have had some projects that have been  
9    delayed with non-utility generation. They haven't  
10   been, you know, very long because of the types of  
11   delays possibly that they were at, but non-utility  
12   generators experience delays as well, so ...

13                  Q. Okay. Let's go to operational  
14    uncertainty which you have described a bit and I guess  
15    it is sort of related to project uncertainty as well.

16                  You talk somewhere in this -- where is  
17    it -- the page we were just on, reliability of NUGs.

18    You say:

19                  Owners revenue profit depends on  
20                  reliable equipment, strong motivation.

21                  The profit motive is a strong motivator  
22    for NUGs, right?

23                  A. We think so, yes.

24                  Q. Okay. Isn't it true that independent  
25    power producers only get paid when they produce?

1                   A. In general, yes.

2                   Q. You have some independent power  
3 producers that get paid for not producing power?

4                   A. We gave you an example this morning  
5 on guaranteed payment.

6                   Q. Okay. But that is really only a  
7 loan, isn't it?

8                   A. No. That is an advancement of  
9 performance. What we are saying, what we are really  
10 doing there is basically assuming that based on the  
11 information received on the project, that that project  
12 will, in fact, perform as stated over a long time, but  
13 on any given month or any given year because of water  
14 fluctuations, they may not.

15                  Q. But isn't that structured so that you  
16 advance in early years or in bad years and you get it  
17 back in good years?

18                  A. No. That is the advance payment or  
19 front end loading, which is another element of the  
20 financial assistance program.

21                  Q. Oh, okay. So the guaranteed payments  
22 then, you just pay a guaranteed amount and whether the  
23 producer produces the power expected is irrelevant to  
24 you thereafter?

25                  A. I am sorry, what was the last point?

1 Q. Let me come at this a different way:

2 I was under the impression that the guaranteed payments  
3 were set up so that you made a projection of what the  
4 long-term power production would be and then evened it  
5 out and made a guaranteed payment every year in order  
6 to help the NUG get financing; isn't that right?

7 A. I believe this morning I said that  
8 that is not the way the guaranteed payment works.

9 What we do is we don't make the  
10 projection, first of all, of the project; the proponent  
11 makes the projection of what the delivery will be.

12 But because of typically banks having  
13 uncertainty with regard to water flows, because they do  
14 vary from month to month, the bank will not provide  
15 adequate financing unless they can feel reasonably  
16 comfortable that they will get paid.

17 And so what we have done is we have said,  
18 look, one of the ways to do that is we will guarantee a  
19 monthly payment that is based on performance over a  
20 long period of time, but in any given month, the  
21 performance may not be there.

22 We set the guaranteed payment such that  
23 it basically covers off the fixed cost of the  
24 financing. And if the developer doesn't perform, then  
25 that developer owes us money.

1                   Q. So it is a loan?

2                   A. I don't think it is a loan. I think  
3                   it is just covering off the risks of performance.

4                   Q. Maybe this is semantic. The  
5                   developer owes you the money, right, if they don't  
6                   perform?

7                   A. That is correct.

8                   Q. But that is not a loan?

9                   A. Well, if you want to call it a loan;  
10                  I call it a guaranteed payment process and a deficit  
11                  part of the performance on a month-to-month basis.

12                  Q. Okay. They have to pay that money  
13                  back by the way?

14                  A. That's correct.

15                  Q. Okay. Is it not also true that  
16                  independent producers get paid more for their power  
17                  when they supply it when you need it rather than when  
18                  you don't need it?

19                  A. That is correct.

20                  Q. And if profit is a strong motivator,  
21                  wouldn't that suggest that they would be more likely to  
22                  supply it when you need it than when you don't need it?

23                  A. Not necessarily. As an example, the  
24                  bottom-line driver with a cogenerator is a steam load  
25                  typically. And so, therefore, he would not be looking

1 at the electrical side and saying, I am going to match  
2 with the electrical production based on the utility  
3 system.

4 The whole purpose of cogen is to match  
5 with the steam. And so, therefore, he would be  
6 operating to keep track of the steam requirements of  
7 that operation.

8 Q. Of course, it is very common that  
9 steam load requirements are very similar in timing to  
10 electricity load requirements; isn't that right?

11 A. Well, I wouldn't think so.

12 Q. You don't think that is true that  
13 there is more steam load during the day, for example,  
14 than at night typically?

15 A. No. Typically, if you look at the  
16 larger steam users, they are a 24-hour operation.

17 Q. Okay. Assuming there are three shift  
18 operations, they are 24 hours, right?

19 A. Well, typically, that is the ones  
20 that we have been dealing with.

21 Q. All right. The third of these  
22 concerns is political pressures and I couldn't  
23 understand that.

24 Are there political pressures against  
25 independent power?

1                   A. I think when we talk here about  
2 political pressures, we are talking about the entire  
3 regulatory scene and the fact that if regulations  
4 change, some of the cost implications may change the  
5 viability of the projects.

6                   So, it is the entire spectrum of  
7 environmental requirements here in Ontario. It could  
8 also be things like -- or in Canada, Class 34 possibly  
9 and the elimination of Class 34.

10                  Q. We are going to come back to Class  
11 34.

12                  So, you are talking about things like the  
13 ban on municipal solid waste; is that the sort of  
14 concern you are talking about there?

15                  A. Well, I guess I could just be talking  
16 about anything that could change today's situation from  
17 an overall perspective to something different, and I  
18 would put it under the term 'political'. It could be  
19 small 'p' as opposed to large 'P'.

20                  Q. Okay. And finally, changing fuel  
21 costs, is that sort of related to what you were talking  
22 about earlier, operational and project uncertainty?

23                  A. Yes.

24                  Q. Will they be able to afford to run  
25 it?

1                   A. That is correct, and the profit  
2                   motive.

3                   Q. So of these things, of these  
4                   concerns, three of the four are largely, will it keep  
5                   producing when we expect it to; isn't that right?

6                   A. Generally speaking, yes.

7                   Q. Have you done any review in the  
8                   United States of what has happened there in that  
9                   regard?

10                  A. We have looked at the American scene,  
11                  yes, specifically.

12                  Q. And what have you found is the  
13                  history after a project comes in service; are there a  
14                  lot of dropouts after that?

15                  A. Well, again, I think Mr. Brown was  
16                  sort of talking about the reliability and the fact that  
17                  there is not that much information out there yet from  
18                  our perspective that talks about the reliability over  
19                  the long term.

20                  Q. Well, Mr. Vyroostko, is it true that  
21                  California has about 10,000 megawatts of non-utility  
22                  generation?

23                  A. That's correct.

24                  Q. And that they have been buying it  
25                  since about 1978 or before?

1                   A. Well, again, they probably -- I am  
2 not sure when they started; I can't answer that. I  
3 know that in the mid-'80s, they were ahead of most  
4 other utilities in the acquisition of non-utility  
5 generation. Whether they started in '78 or '80 or '81,  
6 I don't know.

7                   Q. At least a decade; is that fair?

8                   A. It is probably ten years, yes.

9                   Q. Is it true that there have been  
10 virtually no dropouts from the NUG program in  
11 California, virtually no projects that have dropped off  
12 the system; is that true?

13                  MR. BROWN: A. I think that is a  
14 technology-specific question. There have been dropouts  
15 in California, such as wind projects, solar projects.  
16 I believe that cogen have been performing adequately.

17                  Q. So you know of some projects in  
18 California that contracted to produce power and then  
19 stopped?

20                  A. That's correct.

21                  Q. Okay. Wind and solar projects  
22 though?

23                  A. Those are the only two I am aware of.

24                  Q. It is just two projects you know of?

25                  A. Two technologies.

1 Q. Oh, okay. And you know of no cogen  
2 projects that have dropped off?

3 A. I am not aware of any.

4 Q. Does that give you comfort, Mr.  
5 Vyrostko, that these uncertainties are fairly minor?  
6 Is that a fair conclusion to draw?

7 MR. VYROSTKO: A. Again, let me just  
8 reiterate what I said this morning. This presentation  
9 was dealing with general NUGs. And for instance, when  
10 we are talking about operational uncertainty and all  
11 that, we are talking about operational uncertainty in  
12 general.

13 Some technologies are probably a lot more  
14 assured of performance than others and I wasn't  
15 specific here with regard to saying one is worse than  
16 another with regard to operational uncertainty or  
17 project uncertainty. All I was saying, that there are  
18 concerns with regard to non-utility generation in  
19 general and that is one of them.

20 Q. So then these concerns are basically  
21 concerned about wind and solar; am I just leaping to  
22 too far on that?

23 A. No. In fact, I didn't say that at  
24 all. I said these talk about the general industry and  
25 there may be some areas that are less concerns than

1        others, but these are still concerns with the general  
2        industry.

3                    MR. SNELSON: A. If I can just add  
4        something there. I think it would be incorrect to draw  
5        conclusions as to the long-term viability of  
6        cogeneration projects, many of which are fueled with  
7        natural gas, from their experience during a period  
8        where natural gas prices have either been falling or  
9        stable. And some of the concerns perhaps in the very  
10      long term reflect what happens when natural gas prices,  
11      perhaps as they may, start to return to levels they  
12      were previously at.

13                  Q. Is the concern that the fuel costs of  
14      a project will go up so much that it won't be making  
15      enough money and they will have to close it? Is that  
16      the concern?

17                  A. In some cases, that may be a concern.  
18      Mr. Vyrosto has, I believe, indicated that we try to  
19      protect against that by clauses in contracts and  
20      seeking long-term fuel commitments to limit that risk.

21                  Q. Well, if you didn't do it, isn't it  
22      true that the project's bankers would insist on that?

23                  A. I couldn't comment on that.

24                  Q. Well, Mr. Vyrosto, you have seen  
25      lots of them.

1                   MR. VYROSTKO: A. In most cases, the  
2 bankers would try to, I think, protect themselves for  
3 their investment one way or the other, whether it is  
4 through the interest rate or whatever.

5                   Q. So just in general, what happens to a  
6 project if the costs escalate, the operating costs  
7 escalate? What do you expect will happen?

8                   A. The developer would basically assume  
9 the additional costs.

10                  Q. If the developer doesn't want to?

11                  A. Then he closes up the shop.

12                  Q. He closes up shop?

13                  A. I would think so.

14                  Q. And you don't get any more power?

15                  A. It depends on the type of security  
16 that is in there. In some cases, we wouldn't get any  
17 power.

18                  If the financier has, for instance, been  
19 paid off - let's assume for some reason they are able  
20 to get paid off before that happened - then there is no  
21 need to -- at least nobody would be looking at carrying  
22 on with that project. We would be concerned about the  
23 megawatts, but we have no access to it because it is  
24 not in the contract. So, in fact, the project is gone.

25                  Now, that developer may turn around and

1 sell it and see if he can sell that to somebody else  
2 who then can turn around and make it operate.

3 Q. Well, let's just hypothesize you have  
4 a \$100 million cogeneration facility and suddenly fuel  
5 prices go sky high - they double or something like  
6 that - and you are the developer and you are going to  
7 have a negative cash flow every year.

8 You are suggesting that the developer  
9 could either close it and sit on it or sell it; is that  
10 right?

11 [3:00 p.m.]

12 A. Those are possibilities, yes.

13 Q. Why would the developer just close it  
14 and sit on it? Isn't that the worst thing to do?

15 A. Depending on what he sees happening  
16 over the long term with that investment, he may either  
17 want to -- if he feels he can get enough return back,  
18 he will continue to operate, to mitigate any losses, or  
19 in fact he may turn around and try and sell it again to  
20 try to mitigate those losses.

21 But I guess one of the points here, you  
22 are talking, you specifically said a cogen.  
23 Remembering that the cogen is in the business of  
24 producing something, not electricity.

25 Q. Yes.

1                   A. So there is an uncertainty with  
2                   regard to overall economy that I talked about  
3                   yesterday, that may in fact have that operation close  
4                   up shop. That pulp and paper industry may in fact just  
5                   close up because they are not there any more.

6                   Q. And they won't produce electricity  
7                   anymore from that fuel because it wouldn't be  
8                   cost-effective; right?

9                   A. Again, that is a choose that they  
10                  would make at the time. But we have experienced in the  
11                  front end part of the project, negotiations with people  
12                  who in fact had to change their whole approach to a  
13                  project and basically drop it out of the basket because  
14                  their economic situation changed.

15                  Because a cogen plant isn't there  
16                  specifically to produce electricity, it's there because  
17                  of the steam requirement for the steam host, then you  
18                  have to really ask yourself, what drives the  
19                  electricity production. The fact it's producing  
20                  electricity for a utility or because it's matching the  
21                  requirements with steam.

22                  Q. Now remember, Mr. Vyrosto, what we  
23                  are talking about right now is changing fuel costs. I  
24                  don't understand and maybe you could explain to me why  
25                  any developer with an asset there that cost \$100

1       million, or whatever, would say, Oh, my fuel costs are  
2       too high, I am going to close it down write it off. I  
3       don't understand how that could happen.

4           A. Well, it hasn't happened to us here  
5       yet, so I am just speculating as to what might happen.

6           Q. Can you think of a set of  
7       circumstances in which a developer instead of selling  
8       it and getting something for it, would just write it  
9       off?

10          A. I guess I mentioned that in fact that  
11       is one of the options that they would look at. They  
12       would look at selling it to see whether in fact they  
13       can minimize their losses.

14          Q. They could sell it for 50 million,  
15       say, and then the purchaser does have okay economics;  
16       right?

17          A. Well, if the economics are okay then  
18       they can sell it and possibly the new purchaser can now  
19       take it over and make it occur.

20          In some case it may not even be economic,  
21       depending on how high the price has gone, and the best  
22       they might be able to sell for it is the actual assets  
23       in the ground and just get money for the assets and it  
24       is not a producing plant.

25           MR. SNELSON: A. The simple answer is

1 that if the fuel cost of running the plant, the fuel  
2 and operating costs of running the plant without  
3 consideration of financing charges is higher than the  
4 revenues from the sale of the electricity that would be  
5 produced, then you would lose more money by operating  
6 than you do by not operating.

7 Q. That's good. So, is it fair to say,  
8 Mr. Vyrosto, that typically the total operating costs  
9 including fuel of a cogen facility are in the order of  
10 40 per cent of revenues? Are we in the right range  
11 there?

12 MR. VYROSTO: A. It would be at least  
13 that, I would think, in some cases.

14 Q. Let's pick a number that you are  
15 comfortable with, 40, 50?

16 A. 50?

17 Q. 50, okay. And is it fair to say that  
18 fuel costs are somewhere between 60 and 70 per cent of  
19 total operating costs typically?

20 A. Yes.

21 Q. Good range?

22 A. Yes.

23 Q. So, that's between 30 and 35 per cent  
24 of revenue; right? Revenue is 100 per cent, total  
25 costs are 50 per cent, 60 to 70 per cent of that is

1       going to be 30 to 35 per cent of revenues; isn't that  
2       right?

3                     A. If we are using the 50 per cent,  
4       okay, let's say it's 35 on a 50 per cent project.

5                     Q. So fuel prices then have to roughly  
6       triple before what Mr. Snelson is talking about becomes  
7       a problem; isn't that right?

8                     A. Again, it depends on the circumstance  
9       of the individual project. It could be up to three  
10      times; it could be less.

11                  Q. But we are talking typical numbers  
12      and you have agreed these are typical numbers?

13                  A. It could be three times.

14                  Q. Okay. Do you know offhand what  
15      Hydro's sensitivity analysis on its fuel price band is  
16      for three times, that is tripling of the price?

17                  A. I wouldn't know that.

18                  MR. SNELSON: A. I think you can see  
19      that we actually have a forecast of rising fuel prices,  
20      or rising gas prices. And the reference was the energy  
21      price trends report, which I think was Exhibit 14, and  
22      I think you would find that there was a similar trend  
23      in the gas prices that are on Exhibit 3, not tripling,  
24      but of considerable forecast rate increase.

25                  MR. B. CAMPBELL: Mr. Shepherd, if it's

1 of any use, this panel might well not be aware, but I  
2 think there was, Mr. Burke spoke to this question of  
3 volatility of natural gas price. I believe there was  
4 some evidence given on that. But the actual experience  
5 with volatility of natural gas prices was given in  
6 Panel 1, and if you like, I am sure that can be found.

7 MR. SHEPHERD: Thank you.

8 Q. From your experience, Mr. Vyrostko,  
9 would it be reasonable to assume that the risk that  
10 changing fuel costs would produce the sort of result  
11 that Mr. Snelson is talking about is very small?

12 MR. VYROSTKO: A. Yes.

13 Q. Very small. Thank you.

14 Aside from that situation, aside from the  
15 situation in which you really just can't operate it  
16 because the operating costs exceed revenues, absent the  
17 value of the capital, aside from that situation, is it  
18 fair to say that changes in the operating finances of a  
19 project will mean losses to the financier or to the  
20 developer or to maybe the gas producers, somebody in  
21 the private sector, but they will not mean ultimately a  
22 loss to Ontario Hydro or a loss of the power; isn't  
23 that right?

24 THE CHAIRMAN: Well, that is two  
25 questions, the first is a loss to Ontario Hydro the

1 second one is a loss of the product.

2                   MR. VYROSTKO: In the loss to Ontario  
3 Hydro I would agree with you. But the loss to the  
4 megawatts and megawatthours I can't answer that because  
5 I believe that there could be situations where in fact  
6 the project would just not operate. At least that  
7 would be part of our concerns, that that could happen.  
8 Whether it does or not, I can't answer that. But I  
9 would have concerns that that could happen.

10                  MR. SHEPHERD: Q. Well, we have  
11 established, haven't we, that there is a very small  
12 risk that total operating costs will exceed revenues;  
13 correct?

14                  A. Again, you are dealing with the  
15 cogeneration project. For instance, if we take some of  
16 the more exotic types of projects, that may be a little  
17 more of a situation where you just can't carry on and  
18 there is nothing else to do but to close the operation.

19                  Q. Municipal solid waste perhaps.

20                  A. Wood waste, if all of a sudden there  
21 isn't wood available because of the operation.  
22 Landfill gas.

23                  Q. The gas runs out sooner or later.

24                  A. Or it doesn't in fact get developed  
25 as people would have predicted it to.

1 Q. Of course the reverse is true of  
2 small hydro; right? In the case of small hydro there  
3 is almost no possibility, isn't it, that they would  
4 stop producing; isn't that true?

5 A. I think that there will always be  
6 water, so therefore I would think that the producer  
7 would continue to produce. Yes, I would think so.

8 Q. And if their economics got out of  
9 whack because of financing or whatever, they would just  
10 sell it; right?

11 A. I would assume so.

12 Q. That's happened in fact in Ontario,  
13 hasn't it, already?

14 A. Yes.

15 Q. All right. So, you have agreed that  
16 if these problems happen, there is no financial loss to  
17 Ontario Hydro; is that correct?

18 A. Generally speaking, no.

19 Q. If the same problems happen to a  
20 facility owned by Ontario Hydro, your ratepayers pay  
21 that for that problem; don't they?

22 A. That's correct.

23 Q. That's part of the risk off loading  
24 we are talking about?

25 A. That's correct.

1                   Q. I am going to leave the MEA speech  
2 you will be happy to know, but just one other question.  
3 Are there any other material concerns relating to  
4 independent power that are not included in what we have  
5 been talking about?

6                   A. Well, I covered some of them  
7 yesterday in direct.

8                   Q. Yes.

9                   A. So, between that and these, I would  
10 think it covers off the majority of them.

11                  Q. Okay. When I listened to your direct  
12 evidence, Mr. Vyrostko, one thing that struck me and  
13 maybe I just missed it, and I am not meaning to be  
14 accusatory here, but one thing that struck me is that I  
15 didn't hear a statement of the overall goal or like a  
16 mission statement of the NUG division. Did I just miss  
17 that or was it not there?

18                  A. Specifically as a goal statement it  
19 was not there.

20                  Q. Can you tell us what the goal of your  
21 division is?

22                  A. I'm sorry, I don't have to look at my  
23 material to tell you what the goal is. I was checking  
24 my direct to see if I had said it.

25                  The goal of our division is to in fact

1 promote and establish maximum economic non-utility  
2 generation for the benefit of the province.

3 Q. That's wonderful. I was going to  
4 turn up the interrogatory and quote it to you, but you  
5 just quoted it exactly. That's excellent.

6 That's your formal goal; right? That's  
7 what you are there for?

8 A. That's the division's goal, that's  
9 correct.

10 Q. Is there anything else really  
11 fundamentally, if you were writing a mission statement  
12 for your division, is there anything else really  
13 fundamental you should put in that?

14 A. I think one of the other fundamental  
15 elements is that all of this has to be within the  
16 overall system requirement, effectively integrated into  
17 the system.

18 Q. Okay. Is there anything else in  
19 terms of the things that you are trying to achieve, the  
20 really important things you are trying to achieve, is  
21 there anything else that we should be talking about?

22 A. I am not sure. We developed a goal,  
23 we tried to use words that would be as long-lasting and  
24 as comprehensive as possible. So, to promote and  
25 establish to us mean a lot of the things that we have

1        been doing in terms of creating partnerships and  
2        dealing with the industry, and in fact trying to ensure  
3        that there is an industry in the province that we can  
4        rely on to provide us with the non-utility generation  
5        that we are expecting for our forecast.

6                  Q. Those things are all implementation  
7        though, they are not goals; right? Sub goals?

8                  A. Yes. But I think the activities,  
9        some of those activities such as partnerships and all  
10      that is in to remote and establish. So, from that  
11      perspective that goal is encompassing a lot of that.

12                 But in terms of the mission statement, a  
13      mission statement covers off some of the programs and  
14      activities that one wants to do and we talked about  
15      those yesterday.

16                 Q. Is it a fundamental goal of your  
17      division to increase Ontario Hydro's supply  
18      flexibility?

19                 THE CHAIRMAN: Through a NUG program you  
20      mean?

21                 MR. SHEPHERD: Well, I am asking what he  
22      decides what the important things are to drive for, is  
23      supply flexibility one of them.

24                 MR. VYROSTKO: I think that's part of the  
25      corporate strategy, the demand/supply strategy.

1 MR. SHEPHERD: Q. That is part of your  
2 goals by --

3 MR. VYROSTKO: A. By the fact I work for  
4 Ontario Hydro, that's correct.

5 Q. Is it part of your goal to produce a  
6 supply mix with fewer and less severe negative  
7 environmental and social impacts?

8 A. I think our objective there is to do  
9 whatever is in the benefit of Province of Ontario. So  
10 our goal is to do what is important to the overall  
11 province.

12 [3:18 p.m.]

13 Q. And you believe that reducing the  
14 negative environmental and social impacts of electric  
15 generation is something that's for the benefit of the  
16 people of Ontario?

17 A. I believe so.

18 Q. So we will hear then about some  
19 programs or some policies that you've developed to  
20 accomplish that goal within the NUG division?

21 A. I don't think so.

22 Q. You don't have any?

23 A. With regard to non-utility  
24 generation, the only policy we have, which is the draft  
25 policy we've talked about that was submitted through an

1 interrogatory, is the creating of the awareness with a  
2 proponent that the environment is an important element  
3 in the overall siting and in constructing of a plant  
4 and that that proponent avail themselves of all the  
5 appropriate regulations and permits.

6 Q. Is it one of the goals of your  
7 division to do to the extent that you can, to  
8 accomplish to the extent that you can, the handing back  
9 of control over local natural resources to local  
10 residents such as native peoples; is that one of your  
11 goals?

12 A. Currently it's not a goal.

13 Q. Is it fair to say that the -- I'm  
14 going to try and recharacterize this without using  
15 loaded words. Is it fair to say that what the NUG  
16 division does is essentially an exercise in getting low  
17 cost electricity supply; is that most of what you do?

18 A. No. I think the objective that we  
19 have, as we've said before, is to build an industry  
20 that, in fact, can bring flexible options to the  
21 province.

22 In some cases they may be low cost or  
23 lower cost than ours, in some cases they're at full  
24 avoided cost, but because of all of the benefits that  
25 we've talked about, there is advantage to the system to

1 try to bring all that in.

2 So there isn't a single focus that says,  
3 it has got to be low cost, lower cost.

4 Q. Well, your rule though; isn't it,  
5 that if it's not the same or cheaper than Hydro-owned  
6 generation, you won't buy it; right?

7 A. But that's exactly -- I made that  
8 point, I said that it has to be at or below our cost.

9 Q. Okay.

10 MR. SNELSON: A. You are, of course,  
11 recalling that we do have a 10 per cent preference for  
12 certain technologies that are considered to be more  
13 socially and environmentally acceptable.

14 Q. I hadn't forgot it, Mr. Snelson,  
15 we'll get to it later. I'm now coming to the third  
16 heading, in the outline, Mr. Chairman, in case you're  
17 following along on the outline.

18 I wanted to talk a bit about Class 34.  
19 You've mentioned that in your direct evidence, Mr.  
20 Vyrostko. Can you tell us how that works?

21 MR. VYROSTKO: A. I can only tell you  
22 very simply how it works because the whole application  
23 of that is with the proponent not with us.

24 Our understanding is that Class 34 is an  
25 accelerated write-off of the equipment that's used for

1 projects that generate electricity using renewable  
2 fuels or cogeneration, and that is a very important  
3 element in the economic viability of projects with the  
4 proponent.

5 MR. SNELSON: A. I believe the actual  
6 income tax regulations for Class 34 were submitted in  
7 answer to Interrogatory 5.9.32.

8 Q. Really.

9 MR. SHEPHERD: Should we give that a  
10 number, Mr. Chairman?

11 THE REGISTRAR: 321.10.

12 ---EXHIBIT NO. 321.10 Interrogatory No. 5.9.32.

13 MR. SHEPHERD: Q. I'm just guessing, but  
14 I'm guessing that most of the people involved in this  
15 are not going to have an easy time of understanding  
16 Class 34 by reading the regulations.

17 I wonder if we could just have a sort of  
18 a brief explanation of the mechanism.

19 MR. VYROSTKO: A. I'm not familiar with  
20 that. Again, it's an application by the proponent with  
21 the federal government.

22 Q. The responsibility for achieving  
23 Hydro's independent power goals falls ultimately on  
24 your shoulders; doesn't it, Mr. Vyrostko?

25 A. That's correct.

1 Q. Will you take a look at the 1990 NUG  
2 plan, which is Exhibit 83, page 9.

3 MR. BROWN: A. What page, please?

4 Q. Nine. If you look under the heading  
5 on that page, fossil-fueled generation, the second  
6 paragraph, it says:

7 "Class 34 CCA write-off is a vital  
8 component of any thermal NUG project and  
9 this is not available to projects other  
10 than cogeneration and waste resource  
11 facilities. Without Class 34, and based  
12 on assumed purchase rates,  
13 fossil-fueled generation does not appear  
14 economically viable in Ontario. This  
15 situation is not expected to change in  
16 the foreseeable future."

17 If I read that right - tell me whether  
18 this is correct - without Class 34 eligibility projects  
19 aren't viable; is that right?

20 MR. VYROSTKO: A. I thought I just  
21 mentioned this in response when I was describing what  
22 Class 34 is. I said that I believe.

23 Q. Okay. And if the projects out there  
24 aren't viable, then there's no way you can achieve  
25 these goals of 3,100 megawatts; is there?

1                   A. If we assume that the projects that  
2 can't get 34 are the ones that are in the plan for  
3 3,100 megawatts, then we wouldn't achieve it, that's  
4 correct.

5                   Q. You have assumed that the bulk of  
6 your 3,100 megawatts is projects that would get Class  
7 34; correct?

8                   A. That's correct.

9                   Q. 70 per cent, 80 per cent, something  
10 like that?

11                  MR. BROWN: A. 1990 NUG plan, all  
12 projects qualified for Class 34.

13                  Q. But Mr. Vyrostko, you don't even have  
14 a general knowledge of how this works.

15                  MR. VYROSTKO: A. Well, it depends what  
16 you determine by general knowledge. I explained what  
17 it does. It's an accelerated tax write-off and it's  
18 applied against the equipment that's used for the  
19 project. I'm not sure if I need any more general  
20 knowledge.

21                  Q. Okay. Well, we'll test that. Is it  
22 also true, Mr. Vyrostko, that the NUG division often  
23 has to do economic analyses of projects as part of the  
24 contracting process; isn't that often what you do?

25                  A. What we do is we take the

1 characteristics of the project, apply our avoided cost  
2 to that project to determine the affordability limit of  
3 that project, and that's what we do.

4 Q. And when you do that economic  
5 analysis, obviously you have to include consideration  
6 of Class 34; correct?

7 A. No, we don't do that. That's the  
8 proponent's responsibility for that assessment.

9 Q. So, when you look at whether a  
10 project is economically viable, you don't consider this  
11 very important financial element?

12 THE CHAIRMAN: No, he didn't say that, he  
13 said that they take the proponent's analysis of it.

14 MR. VYROSTKO: The proponent is  
15 responsible for looking at whether the project is  
16 technically or economically viable.

17 What we do is, we provide the information  
18 in terms of, from our perspective, looking at what  
19 value the project has to us, okay, in terms of avoided  
20 costs. Class 34 doesn't impact on the avoided cost.

21 MR. SHEPHERD: Q. I thought I saw  
22 somewhere - and maybe you can correct me if I'm wrong -  
23 that there's a whole list of financial information that  
24 developers are asked to give you?

25 MR. VYROSTKO: A. Yes.

1                   Q. Isn't that correct?

2                   A. Yes.

3                   Q. But you don't do anything with that,  
4 you don't do any financial analysis with it?

5                   A. I think typically what we would be  
6 doing is using that information to see whether the  
7 project and the proponent have enough sense of the  
8 project that the costs and some of the financial  
9 indicators are reasonable.

10                  The other reason why we ask for that is  
11 to ensure that the proponent, when he's submitting a  
12 proposal, has considered all the key elements that are  
13 necessary to put a project together, so that after they  
14 have spent time with us they wouldn't say: Oh, gee, I  
15 forgot that I had to think of what my financing is or  
16 what my financing costs are.

17                  So it's a checklist of being sure that  
18 all this information is available.

19                  Q. So you don't do a financial  
20 feasibility analysis on projects; is that right?

21                  A. We do an assessment of the project,  
22 of the overall project, as to how it ties in to our  
23 avoided costs. In terms of looking at the financial  
24 and the profit margins of the project, we don't look at  
25 that.

1                   Q. So --

2                   A. At least, we don't do that. We don't  
3                   do that analysis at all.

4                   Q. Is it typically true that you ask for  
5                   it from the proponent; ask the developer to provide you  
6                   with that?

7                   A. No, no, I don't think it's typical.

8                   Q. So, I'm just looking at page 4 of the  
9                   supplementary witness statement, which is Exhibit 319.

10                  At paragraph 14, the second last sentence:

11                  "Promising proposals are subject to  
12                  more detailed feasibility review and  
13                  financial evaluation."

14                  Is that just the avoided cost  
15                  calculation; is that all you're talking about there?

16                  A. Basically what we're looking at there  
17                  is to see whether, in fact, the project can match the  
18                  avoided costs over the period and whether, in fact,  
19                  there are things that we can do in terms of negotiating  
20                  the project such that financially either the cash  
21                  streams or whatever can fit the affordability limits  
22                  that we have.

23                  Q. When you do that, you have to look at  
24                  the cash stream of the project; correct? Is that what  
25                  you just said?

1                   A. We sometimes would do that, that's  
2                   correct.

3                   Q. And included in the calculation of  
4                   the cash stream is the Class 34 impact; is that true?

5                   A. Depends. Maybe, maybe not. It  
6                   depends on what the proponent, in fact, has given us in  
7                   terms of his annual requirements.

8                   Q. All right.

9                   DR. CONNELL: May I just intervene. Do I  
10                  understand that the proponent's return on the  
11                  investment is not material as far as you're concerned?  
12                  It is conceivable that a NUG project may have a very  
13                  high return of 40 per cent or something of that order  
14                  and that would not attract your interest or attention?

15                  MR. VYROSTKO: Well, in many cases the  
16                  return is an important element to the proponent, and so  
17                  when the proponent is putting a project together,  
18                  obviously the amount of return that's there is  
19                  critical.

20                  DR. CONNELL: Yes.

21                  MR. VYROSTKO: And the question then  
22                  becomes whether, in fact, that return is sufficient to  
23                  make a project a viable project.

24                  If the proponent walked into our office  
25                  and put a project on the table that was 15 per cent

1 below avoided costs, I wouldn't be interested  
2 necessarily in what the rate of return is on that  
3 project because I'm getting a very good ratepayer  
4 benefit on that project.

5 DR. CONNELL: See, I misunderstood. I  
6 thought you must have some guideline for a fair rate of  
7 return and that you would scale back from avoided cost  
8 on that basis, but I misunderstood that.

9 MR. VYROSTKO: No, we're not in any  
10 position to determine what's a fair rate of return for  
11 the proponent. All we can basically say is that here  
12 is the project value to us and the proponent then looks  
13 at whether that's a fair rate of return.

14 As I said before, if the proponent comes  
15 in and says, I can give you this project at this dollar  
16 level and it's well below our avoided costs, then  
17 that's fine.

18 DR. CONNELL: But if it came right at  
19 avoided cost, you would see no reason to try to scale  
20 back from that point?

21 MR. VYROSTKO: No. I guess the challenge  
22 does become when you get to the avoided cost limit.  
23 Most of the projects today are coming very close to  
24 avoided cost and so the rate of return is very  
25 important to the proponent at that stage because it's

1 now getting at the decision-making perspective.

2 And because of that there is a lot more  
3 activity that goes on between us and them to try and  
4 now see whether, in fact, we can help that project one  
5 way or the other to make a project happen within our  
6 avoided cost and still meet his minimum rate of return.

7 So in those cases, where you're looking  
8 at marginal projects, now that becomes an issue that is  
9 discussed with us and the proponent.

10 DR. CONNELL: But if a proponent appeared  
11 to you to have a very inflated view of what might be a  
12 reasonable rate of return, you wouldn't call it into  
13 question?

14 [3:32 p.m.]

15 MR. VYROSTKO: In general, we wouldn't do  
16 that, no.

17 MR. SHEPHERD: I just have a couple of  
18 more questions on this, Mr. Chairman. Maybe I can  
19 complete them.

20 Q. Mr. Vyrosto, it is true that on  
21 average, on a weighted average basis, the projects you  
22 have currently in service and committed are something  
23 in the order of 98 per cent of avoided cost?

24 MR. VYROSTKO: A. That's correct.

25 Q. And, I take it, Mr. Vyrosto, that

1       when the price a proponent wants is close to or on  
2       avoided cost, you want to look at the financial  
3       information to see whether they need it to make the  
4       project fly; is that correct?

5                     A. If we sort of go back to yesterday's  
6       direct evidence and talk about how we negotiate  
7       projects, by the time we are at the stage where the  
8       proponent is tabling a project to us at avoided cost,  
9       there has been a lot of information that has gone both  
10      ways to help that project become a very well designed,  
11      a very tight project, so some information would be on  
12      the table; whether it is specifically financial, what  
13      you are asking, or general financial information, but  
14      we would have some information definitely.

15                  Q. I put it to you - please tell me if I  
16       am correct - I put it to you that if you went into your  
17       files of every current project that you are looking at  
18       right now or in-service or committed, if you went into  
19       your files, I put it to you, you would find that in  
20       four out of five, at least, there would be a full  
21       financial spread sheet on the project; is that true or  
22       not?

23                  A. The spread sheet by who, us or the  
24       proponent?

25                  Q. Either.

1                   THE CHAIRMAN: Well, just let's get that  
2                   clear.

3                   Whose spread sheet, Hydro's or the  
4                   developers?

5                   MR. SHEPHERD: At this point it doesn't  
6                   matter, Mr. Chairman, I will explain why in the  
7                   subsequent questions.

8                   THE CHAIRMAN: Well --

9                   MR. SHEPHERD: I mean, I can ask both.

10                  THE CHAIRMAN: Ask it one at a time then.

11                  MR. SHEPHERD: Okay. Well, there is no  
12                  way of asking it one at a time. (laughter)

13                  I don't know what the percentages are. I  
14                  don't know how many Hydro does and how many the  
15                  developers do; I know what the total is.

16                  THE CHAIRMAN: I would assume Hydro would  
17                  do it every time, but we may find that out if you ask  
18                  them that. For their own purposes, they must have to  
19                  do a calculation every time.

20                  MR. SHEPHERD: Q. Perhaps you could  
21                  estimate on what percentage of projects has Ontario  
22                  Hydro done a full financial evaluation.

23                  MR. VYROSTKO: A. Less than half.

24                  Q. And on what percentage of projects  
25                  would you think you would have a financial evaluation

1 from the developer?

2 A. A very small percentage.

3 Q. A very small percentage?

4 A. Yes.

5 MR. SHEPHERD: Okay. Mr. Chairman, we  
6 might want to take the break now if it is convenient.

7 THE CHAIRMAN: All right, 15 minutes.

8 THE REGISTRAR: This hearing will recess  
9 for 15 minutes.

10 ---Recess at 3:36 p.m.

11 ---On resuming at 4:56 p.m.

12 THE REGISTRAR: Please come to order.

13 This hearing is again in session. Be seated, please.

14 THE CHAIRMAN: Mr. Shepherd?

15 MR. SHEPHERD: Q. Mr. Brown, let me just  
16 clear up one thing. You said when we were talking  
17 about reliability I guess, that you were aware of  
18 projects in California, wind and solar projects that  
19 had failed and stopped producing.

20 I wonder if you could just undertake to  
21 provide us with a list of those that you are aware of,  
22 just ones you are aware of.

23 MR. BROWN: A. The information I  
24 received was just from a tour of the facilities. I  
25 just saw the windmills not moving and I was told by the

1 tour guide that these have now been closed down. I was  
2 also told that PV facilities set up for the United  
3 States was being removed and all the panels were being  
4 sold to other people to use.

5 Q. Do you know who owns that PV  
6 facility?

7 A. Many people now. (laughter)

8 Q. That is the one at Clarissa Plains,  
9 right?

10 A. I am not aware of the name, no.

11 Q. Do you know who owns it?

12 A. Who used to own it?

13 Q. Yes.

14 A. No.

15 Q. I put it to you that it is owned by  
16 PG&E. Do you know who PG&E is?

17 A. Pacific Gas and Electric.

18 Q. And who are they?

19 A. A private utility.

20 Q. They are a regulated utility  
21 comparable to Ontario Hydro in that area, aren't they?

22 A. I don't know if they are comparable,  
23 but they are a utility.

24 Q. Okay. They are not a NUG?

25 A. They are in private power.

1                   Q. Sorry, is your evidence that Pacific  
2 Gas and Electric is a private power producer? Is that  
3 your evidence?

4                   A. They are looking to take NUG  
5 opportunities themselves.

6                   Q. And so if they build a facility in  
7 their service territory --

8                   A. I didn't mean that.

9                   Q. Oh, okay. And this PV project - and  
10 I am going to ask you to check this and see whether it  
11 is correct -- if it is in their service territory, is  
12 it correct to say that it is then not a NUG?

13                  A. That's correct.

14                  Q. I wonder if you could undertake to  
15 provide the details of the information that you are  
16 giving now, what projects we are talking about and who  
17 owns them.

18                  THE CHAIRMAN: There are just two, as I  
19 understand it; one was a wind project and the other was  
20 a solar project?

21                  MR. SHEPHERD: Q. Could you undertake to  
22 find that out, when you have a chance, not tomorrow  
23 morning?

24                  MR. BROWN: A. It would take some time.

25                  MR. SHEPHERD: That is fine.

1                   THE REGISTRAR: That is 322.3.

2                   MR. SHEPHERD: 322.3? Thank you, Mr.  
3 Chairman.

4                   ---EXHIBIT NO. 322.3: Ontario Hydro undertakes to  
5                   provide the details of the information  
6                   on the wind and solar projects and who  
7                   owns them.

8                   MR. SHEPHERD: Q. We were talking about  
9 Class 34.

10                  You are familiar, Mr. Vyrostko, with the  
11 heat rate rule in Class 34?

12                  MR. VYROSTKO: A. Yes, I am.

13                  Q. And what is that rule?

14                  A. In essence, it says that if the  
15 facility can get down to a heat rate of 7,000 btu per  
16 kilowatthour, it would qualify under Class 34.

17                  Q. Okay. Now, just --

18                  THE CHAIRMAN: Just for my purpose, what  
19 is the thinking behind that regulation?

20                  MR. VYROSTKO: Basically, by having a  
21 certain level, a threshold level of efficiency - in  
22 essence, the btu per kilowatthour measures the  
23 efficiency associated with the cogen project - it then  
24 qualifies typically for cogeneration or energy  
25 efficiency which is, I believe, the thrust of Class 34.

THE CHAIRMAN: Thank you.

1 MR. SHEPHERD: Q. Mr. Vyrosto, are you  
2 aware of whether Class 34 is restricted specifically to  
3 cogeneration projects?

4 MR. VYROSTO: A. No. It is available  
5 for renewable projects.

6 Q. Aside from renewables, fossil  
7 projects, is it restricted to cogeneration?

8 A. No. My understanding is it is  
9 restricted to projects that, in fact, can get down to  
10 7,000 btu per kilowatthour.

11 Q. Okay. And do all of the projects you  
12 are currently considering meet the 7,000 btu test, the  
13 fossil projects, obviously?

14 A. The which?

15 Q. The fossil and cogen, all the ones  
16 that burn something; do they meet the 7,000 --

17 A. Do all of them meet it?

18 Q. Yes.

19 A. Again, I would think 99 per cent of  
20 them would.

21 Q. And that actually includes that 350  
22 megawatt project you were talking about, doesn't it?

23 A. I can't answer that.

24 Q. That project, the one we are  
25 referring to, that major supply NUG, is not a

1           cogeneration facility, is it?

2           A. That is correct. We said it was and  
3       it was a major supply NUG.

4           Q. Okay. And are you telling me you  
5       don't know or you can't say whether it meets that Class  
6       34 test?

7           A. I guess I am saying I don't know -  
8       not that I can't say; I don't know.

9           Q. You don't know. Okay.

10          Mr. Brown, do you know the answer to  
11       that?

12          MR. BROWN: A. I have not been involved  
13       in that project -- no, I can't.

14          Q. Okay. But your evidence, as I  
15       understand it on page 9 of the 1990 NUG plan, that is  
16       Exhibit 83, where we were actually quoting before, it  
17       says:

18           Class 34 is not available to projects  
19       other than cogeneration and waste  
20       resource facilities.

21           That is not correct, is it?

22          MR. VYROSTKO: A. I think the statement  
23       still is correct, I would think.

24          Q. Well, if a combined cycle project  
25       that is not cogeneration can get down below 7,000, it

1       qualifies, doesn't it?

2                     A. If it could, I would imagine it  
3                     would.

4                     Q. Will you undertake to find out  
5                     whether the one that you were talking about, the one  
6                     that you have signed up -- or sorry, I shouldn't -- the  
7                     one that you have made a preliminary deal with meets  
8                     the heat rate test for Class 34?

9                     A. I cannot do that because I think that  
10                    that violates the situation of that customer right now.

11                  Q. Okay. Can a non-resident of Canada -  
12                  for example, a U.S. developer - take advantage of Class  
13                  34?

14                  A. I don't believe so.

15                  Q. Now, it is true that you have  
16                  recently agreed to terms with several U.S. developers,  
17                  haven't you, including one with a 226 megawatt facility  
18                  in Kingston? That is true, right?

19                  A. We are in the process of concluding a  
20                  deal with one in Kingston, that is correct.

21                  Q. And that is 226 megawatts, is a U.S.  
22                  developer?

23                  A. That's correct.

24                  Q. And can I assume then that that  
25                  project isn't going to get Class 34, right?

1                   A. Again, I don't know that. It is not  
2 up to me to decide whether the project gets Class 34.  
3 It is the proponent's responsibility. And how they put  
4 the project together, it is their responsibility.

5                   Q. Well, as I understand your evidence,  
6 and maybe you can correct me if I am wrong here, if  
7 that or any other project doesn't get Class 34, then on  
8 your evidence, it is not going to be economically  
9 viable. It is not going to happen, right?

10                  A. Well, let's just go back. In our  
11 1990 NUG plan, we said that projects that didn't get  
12 Class 34 weren't economically viable.

13                  Q. Yes.

14                  A. Again, not knowing all the facts, but  
15 I would think generally speaking, the gas prices in  
16 roughly the summer of 1990 when we were doing some of  
17 the analysis and the gas prices now are probably 30 or  
18 40 per cent less.

19                  And so, you know, I guess what the  
20 proponents are telling us their project development is  
21 possibly gas has come down below the threshold where  
22 Class 34 is the key criteria.

23                  Q. I see. I seem to recall a  
24 discussion, some direct evidence yesterday - I am just  
25 recalling this - that the drop in gas prices from last

1 year to this year was 20 per cent; isn't that what you  
2 said, Mr. Brown.

3 MR. BROWN: A. The number recorded was  
4 20 per cent, but you have to also take into account we  
5 are expecting a 7 per cent increase; the difference  
6 almost 30 per cent.

7 Q. So when you say gas prices have  
8 dropped 30 or 40 per cent, that is not correct?

9 A. They have dropped 20 per cent.

10 Q. Okay.

11 A. The expectation has dropped 30 per  
12 cent.

13 Q. Now, the gas prices you are talking  
14 about there, they are the long-term gas prices, right?

15 MR. VYROSTKO: A. No. The prices I am  
16 talking about are the short-term gas prices.

17 Q. Is that what is referred to as the  
18 spot prices?

19 A. No, it is not. It is the short-term  
20 gas prices over the next three to four years.

21 Q. But don't the developers sign  
22 long-term gas contracts?

23 A. Yes.

24 Q. So isn't it the long-term gas prices  
25 that affects them?

1                   A. Yes. As I mentioned before this  
2 morning, it is not only the gas prices, but it is the  
3 expectation of the escalation. And where, you know, a  
4 year ago or a year-and-a-half ago, they were looking at  
5 virtually flat prices - this is back in 1990 and 1989 -  
6 flat prices with a very high escalation, the prices  
7 have actually dropped now and the escalation is not the  
8 same as it was before.

9                   Q. Now, I am probably just dense here,  
10 but I am looking at page 17 of your Exhibit 320. And  
11 you know, maybe this is just not applicable, but I  
12 don't see any 30 or 40 per cent or 20 per cent drop in  
13 gas prices indicated by that chart.

14                  Have I misunderstood your evidence?

15                  [4:07 p.m.]

16                  A. I think Mr. Brown said that this is  
17 the forecast that Ontario Hydro has for natural gas  
18 prices. And what I am talking about is the gas  
19 contracts that are in fact being negotiated.

20                  Q. There is a big difference between the  
21 two.

22                  A. There is at the moment, that's  
23 correct.

24                  Q. Let's come back to Class 34. The  
25 proposals that you are signing up now -- sorry,

1 agreeing to now, they were all proposed to you last  
2 year, weren't they?

3 A. Yes, they were.

4 Q. And so presumably the developers  
5 would have been looking at last year's gas prices when  
6 were making those proposals; right?

7 A. That's correct.

8 Q. And at that time you decided that  
9 their projects weren't economic; they weren't in last  
10 year's plan; right?

11 THE CHAIRMAN: We are talking about the  
12 additions this year; is that right?

13 MR. SHEPHERD: Yes, the 1,000 megawatts  
14 that we were told --

15 THE CHAIRMAN: To the extent that those  
16 additions were last year's proposals.

17 MR. SHEPHERD: Q. I think Mr. Vyrostko  
18 has said - correct me if I am wrong, Mr. Vyrostko -  
19 that they are all last year's proposal.

20 MR. VYROSTKO: A. They are all last  
21 year's proposals.

22 Q. So my question is, is it your  
23 evidence that they were not viable last year?

24 A. We expected most of them not to be  
25 viable.

1                   Q. The developers thought they were  
2 viable, though; is that right?

3                   A. They submitted them as a proposal  
4 under their request for proposal, so the expectation  
5 was that they would be able to put a deal together.

6                   Q. So they turned out to be right.

7                   THE CHAIRMAN: I'm sorry. Just so I  
8 understand, the reason for the increase is not because  
9 you have got new proposals; it's because proposals that  
10 were already on the table have become acceptable to  
11 Hydro? Is that what you are saying?

12                  MR. VYROSTKO: That's correct.

13                  MR. SHEPHERD: Q. So, the developers  
14 when they made those proposals last year, it turned out  
15 they were right; is that correct? Those 1,000  
16 megawatts?

17                  MR. VYROSTKO: A. The proposals, most of  
18 those proposals were submitted through our RFP which  
19 came in January of 1990. And so they put the proposal  
20 together thinking that it can happen.

21                  Q. You didn't think it could happen last  
22 year?

23                  A. Our assessment in the forecasting was  
24 that we didn't think it could happen.

25                  DR. CONNELL: Excuse me, that sounds to

1 me contrary to the response you gave me this morning,  
2 Mr. Vyrosto. We are looking at the 1989 line and I  
3 recall you telling me that you thought that the  
4 proponents had a view that gas prices might in the  
5 future be much higher than the Hydro forecast.

6 MR. VYROSTKO: That's correct.

7 DR. CONNELL: Are you not now saying that  
8 when they put in their proposals last year, they were  
9 anticipating lower prices?

10 MR. VYROSTKO: No, I am not saying that  
11 at all.

12 There is really two players in here. One  
13 is the gas producers and that is the people who in fact  
14 will sell the gas, and then the developer.

15 The developer would put a project  
16 together and submit it to us as a project on the  
17 expectation that they can make the deal go forward, for  
18 a lot of different reasons, whether it's our avoided  
19 costs, whether it's the capital cost that they can  
20 bring to the table or with the expectation that  
21 possibly they can get cheap gas.

22 The gas producers haven't necessarily, at  
23 the time when they were submitting these proposals,  
24 agreed with the developers that in fact gas was cheap.  
25 So, the developers came in with a proposal and they

1        were anticipating that they can make that project  
2        happen under whatever the circumstances were.

3                   And what has happened is that based on  
4        our knowledge of the industry and the gas prices that  
5        were there when the developers put the proposals  
6        together, some of those proposals we didn't think would  
7        materialize. But now with gas prices coming down and  
8        them going to the industry and in fact negotiating  
9        better deals, more projects than we thought could  
10      happen through the RFP in fact didn't materialize. So  
11      that escalated the development of the projects that we  
12      thought could happen.

13                   DR. CONNELL: Have some of the responses  
14      to the RFPs been revised or are they still going with  
15      their original gas price estimates?

16                   MR. VYROSTKO: When the proposal comes to  
17      us there is no price in there. So, in fact, a number  
18      of those projects we actually didn't get into  
19      negotiating the project until the latter part of 1990.  
20      So even though they submitted them back in January of  
21      1990, there was no real activity going on with those  
22      projects later on in the year.

23                   DR. CONNELL: So that the expectations  
24      which they had are now being realized.

25                   MR. VYROSTKO: I guess so, yes.

1 DR. CONNELL: With regard to price.

2 MR. VYROSTKO: Yes.

3 THE CHAIRMAN: I thought you said a few  
4 minutes ago that these proposals were proposals that  
5 had been unacceptable to Hydro a year ago and had  
6 become acceptable in 1991. Was I wrong? Do I have a  
7 wrong impression of what you said?

8 MR. BROWN: The word "viable" might be  
9 better. When I forecasted the 1990 NUG plan, it was  
10 only high-efficiency cogeneration that looked viable at  
11 that time. None of these were high-efficiency  
12 cogeneration projects.

13 Now with the drop in gas prices, it  
14 doesn't have to be high-efficiency cogeneration to be a  
15 viable project. So I don't know if the proponents knew  
16 that ahead of time or it just happened.

17 THE CHAIRMAN: Maybe I should ask you,  
18 and this may sound as if I haven't been paying  
19 attention, but what do you mean when you say a viable  
20 project?

21 MR. BROWN: In the forecast it's using my  
22 cogeneration assessment model and I look at typical  
23 types of projects protection, which ones are economic.

24 THE CHAIRMAN: Economic from Hydro's  
25 point of view?

1 MR. BROWN: No.

2 THE CHAIRMAN: That's what I am trying to  
3 get at. You look at the economies from the proposers  
4 point of view?

5 MR. BROWN: To do the forecasts I do.

6 When we negotiate a project you don't do that.

7 THE CHAIRMAN: If they make a proposal,  
8 which they are prepared to adhere to, why do you care?

9 MR. BROWN: Well, there is 6,500  
10 megawatts of proposals. When we looked at them last  
11 year none of them looked viable.

12 MR. VYROSTKO: I think the other  
13 important point though is when the proposal comes in,  
14 it has no price, so we have no way of knowing what the  
15 price of that proposal is. It comes in with the  
16 technical elements as we outlined through our request  
17 for proposal document, but no price offer is actually  
18 put on the table. And then there is an assessment made  
19 whether we think that that type of project would in  
20 fact be an economic project.

21 THE CHAIRMAN: But if you don't know what  
22 the price is that they are going to charge you, how do  
23 you know whether it's going to be economic or not?

24 MR. BROWN: That's part of my forecast.  
25 I run my cogeneration model to determine which projects

1 I think are viable, and the higher the efficiency the  
2 more economic the project using last year's  
3 information, and that was the gas forecast that was  
4 shown in Figure 17 of Exhibit 320.

5 THE CHAIRMAN: But you are going to pay  
6 these proposers based on your avoided cost  
7 calculations, that's your negotiating base, or ceiling  
8 I guess is a better way of putting it. You will  
9 negotiate the best deal you can within that ceiling  
10 requirement.

11 MR. VYROSTKO: That's correct.

12 THE CHAIRMAN: And whether or not the  
13 person who is bringing the deal to you is going to make  
14 money or how much money they are going to make, you  
15 don't care, as I take it from your earlier evidence.

16 MR. VYROSTKO: That's correct.

17 THE CHAIRMAN: But you are saying, when  
18 you look at these proposals that came in, they didn't  
19 make any sense because you didn't think the proposer  
20 could make any money out of it. Is that what you are  
21 saying?

22 MR. BROWN: At that time they were coming  
23 in, yes.

24 MS. PATTERSON: Is the 6,500 megawatts  
25 all cogeneration or were they everything?

1                   MR. BROWN: There was a mixture in there,  
2 I am not sure. About half of it was cogeneration.

3                   MS. PATTERSON: So you just shifted or  
4 took everything else out except the cogeneration and  
5 then you evaluated those?

6                   MR. BROWN: That's correct.

7                   MR. SHEPHERD: Q. I wonder, Mr. Brown,  
8 if you could turn up Interrogatory 5.14.64, and this is  
9 not actually in the part I have copied because I didn't  
10 expect this to come up.

11                  THE CHAIRMAN: It's not in the package?

12                  MR. SHEPHERD: It's not in the package.  
13 It's a very thick interrogatory, so I only copied a  
14 couple of those pages, and this is not on one of those  
15 pages.

16                  5.14.64. I am actually going to read it  
17 into the record, if you wish, Mr. Chairman.

18                  THE REGISTRAR: 321.11.

19                  (5.14.64 previously numbered.)

20                  MR. SHEPHERD: Q. Do you have that have  
21 there?

22                  MR. BROWN: A. Yes.

23                  Q. Can you take a look at page 14. I  
24 wonder if you could just describe what this document is  
25 that we are looking at. What is the document that is

1 attached to this interrogatory that we are looking at?

2 A. This is the information package that  
3 was sent out to all RFP proponents.

4 Q. I am reading here, on page 14 at the  
5 bottom, it says:

6 Sponsor must have satisfactory  
7 evidence of market access and price,  
8 supply and transportation to the primary  
9 and secondary fuels or availability of  
10 the primary and secondary energy sources  
11 as appropriate for the contract term.

12 Isn't in fact true, Mr. Brown, that every  
13 application that you had on January 25th, 1990, had a  
14 fuel price in it because you required it?

15 MR. VYROSTKO: A. Perhaps I can answer  
16 that. The answer is no.

17 Q. And so that they just didn't comply  
18 with your RFP requirements?

19 A. All we were looking for in there was  
20 that they in fact had looked at fuel, in fact had a  
21 source of fuel that they can go to.

22 The actual price was not negotiated at  
23 that time, because typically we wouldn't negotiate the  
24 overall project.

25 The proponent normally wouldn't negotiate

1 his fuel until he has had time with us negotiating the  
2 details of the overall project, because at that time he  
3 really doesn't know what overall affordability limit  
4 is.

5 Q. So what does satisfactory evidence of  
6 fuel supply price mean?

7 A. Actually, all we would be looking for  
8 there is the prospective people that he will be  
9 negotiating with. There might be a letter of intent  
10 saying that they have started discussions with the  
11 proponent and that he in fact may be one of the people  
12 that the producer would be prepared to enter into a  
13 contract with.

14 Q. So, he sort of had to have done his  
15 homework on supply and transportation or you wouldn't  
16 want to talk to him; is that fair?

17 A. Again, I would think that they would  
18 have done some looking at what is out there, but they  
19 wouldn't have had any details with regard to contracts.

20 Q. I think we probably followed this  
21 tangent far enough.

22 I just want to finish off on Class 34,  
23 just a couple of things. You have said that the  
24 statement in your 1990 NUG plan that all projects have  
25 to have Class 34 to be viable, that's not true anymore;

1       is that correct?

2                   MR. BROWN: A. This is true.

3                   Q. Oh, it is still true?

4                   A. Sorry, your statement is you don't  
5       have to have Class 34 to be viable.

6                   Q. That statement is true?

7                   A. Yes.

8                   Q. Is it your expectation that the bulk  
9       of the projects that come to you will get Class 34?

10                  MR. VYROSTKO: A. Yes.

11                  Let me just go back. You said the  
12       projects that will come to us?

13                  Q. That you have now or that you are  
14       going to get in the next two years or whatever.

15                  A. Well, I guess I can talk about what  
16       we have got to date. I would say the majority of the  
17       projects get Class 34.

18                  Q. Is it your expectation that the 3100  
19       megawatts will be largely made up of the projects that  
20       get the Class 34 incentive?

21                  A. Yes.

22                  Q. Let's just suppose that Class 34 was  
23       cut to a third of its current benefit value today,  
24       right now. I am looking to see if there is any  
25       cogenerators in the room having heart attacks. If that

1       happened today, what sort of impact would it have on  
2       your forecast?

3                   A. I would have to ask my forecaster.

4                   Q. Mr. Brown?

5                   MR. BROWN: A. We haven't studied the  
6       sensitivity of that.

7                   Q. Do you believe it would have a large  
8       impact?

9                   A. A one-third cut?

10          [4:24 p.m.]

11          Q. A cut from full to one third.

12          THE CHAIRMAN: I'm sorry, what are we  
13       cutting?

14          MR. SHEPHERD: The benefit of Class 34,  
15       the actual net present value of that tax benefit.

16          MR. BROWN: I can't speculate on it.

17          DR. CONNELL: What is the rate under  
18       Class 34? It's an accelerated rate.

19          MR. VYROSTKO: I believe the rate is -  
20       it's over three years - so I believe it's 25 per cent  
21       the first year, 50 per cent the second year, and 25 per  
22       cent the last year.

23          DR. CONNELL: And for those that don't  
24       qualify, it would be....?

25          MR. VYROSTKO: It would be straight line

1 with the age of the facility. If it's a 20-year plant,  
2 I would imagine, you know, 1/20th.

3 THE CHAIRMAN: So it's straight line not  
4 declining balance?

5 MR. VYROSTKO: Yes, I would assume --  
6 that's beyond my expertise.

7 MR. SHEPHERD: Mr. Chairman, maybe I can  
8 frame this in a question.

9 Q. Mr. Vyrostko, can you confirm or  
10 undertake to confirm that if a project does not get  
11 Class 34 it is, therefore, a Class 1 and has 2 per cent  
12 declining balance depreciation?

13 MR. VYROSTKO: A. Could you repeat that,  
14 please?

15 Q. Can you confirm or undertake to  
16 confirm that if a project does not qualify for Class 34  
17 then it would come under Class 1 and get 2 per cent  
18 declining balance depreciation?

19 A. I guess -- the non-utility generation  
20 division does not make that call, whether the project  
21 does or does not get Class 34 or whatever it gets, so  
22 I'm not sure what it would get. I'm not an expert in  
23 tax law.

24 Q. Fair enough. I was just trying to  
25 find an indirect way of providing the Chairman with his

1 answer, that's all.

2 A. So it's 2 per cent, is what you're  
3 telling me. Thank you.

4 Q. Of course, my questions are not  
5 evidence.

6 MR. B. CAMPBELL: We will accept  
7 submissions. It's perfectly appropriate for counsel to  
8 make submissions on the law.

9 MR. SHEPHERD: Okay.

10 Q. Just a couple of other questions on  
11 this. You've agreed that U.S. developers or foreign  
12 developers don't get Class 34; correct?

13 MR. VYROSTKO: A. And structured as an  
14 American company, that's correct.

15 Q. And you've signed a number -- or  
16 you've agreed to terms of a number of U.S. developers?

17 A. We have agreed to one, the one you're  
18 referring to is 226 megawatts.

19 Q. Okay. And you have several more  
20 before you that you consider probable projects; don't  
21 you?

22 A. We have proposals from a number of  
23 other developers outside of the province.

24 Q. Okay. And at this point we shouldn't  
25 assume that those are all going to fail because of the

1       lack of Class 34 because fuel prices have changed;  
2       right?

3                   A. Possibly, yes.

4                   Q. All right. Is Class 34 an all or  
5       nothing benefit; you either get 25, 50 and 25 or you  
6       get nothing?

7                   A. Again, I can't answer that. That's  
8       not in my expertise.

9                   Q. Okay. Mr. Brown, do you know?

10                  MR. BROWN: A. I can't comment.

11                  Q. Maybe this is for Mr. Brown.

12                  THE CHAIRMAN: I don't think we can make  
13       many conclusions about Class 34 out of this last hour,  
14       but it does come to me as a surprise that a Canadian  
15       taxpayer with a plant in Canada wouldn't get the full  
16       benefit, regardless of where the ultimate ownership  
17       was.

18                  When you talk about U.S. corporation, do  
19       you mean a US entity or do you mean --

20                  MR. SHEPHERD: A US entity, yes.

21                  THE CHAIRMAN: Not a resident Canadian  
22       taxpayer?

23                  MR. SHEPHERD: Well, unfortunately,  
24       because the panel can't deal with the technical  
25       aspects, I can't go into why in those circumstances

1       they don't get it either, but we will lead evidence on  
2       it later and it will all become clear, I hope.

3                     THE CHAIRMAN: All right.

4                     MR. SHEPHERD: I think we'll do an  
5       exhibit on that in the next few days.

6                     Q. So just one other question on that  
7       then; and, that is, Mr. Brown, have you had occasion  
8       during the course, say, of your forecasting to try to  
9       estimate the net present value in a project of the  
10      Class 34 benefit, tax benefit?

11                  MR. BROWN: A. With and without?

12                  Q. Yes. Yes, the difference in net  
13      present value terms?

14                  A. No, we haven't in that definition.

15      If you refer to Interrogatory 5.14.216--

16                  Q. 5.14.216?

17                  A. Yes.

18                  Q. Okay.

19                  A. And in response to this interrogatory  
20      we ran our cogeneration model with and without Class 34  
21      and showed a difference in the internal rate of return  
22      with and without that assumption.

23                  Q. You have a specialist in your  
24      division; don't you, who is quite familiar with the  
25      technical aspects of this; isn't that right, Mr. Tong?

1                   MR. VYROSTKO: A. He's aware of the  
2 application of Class 34.

3                   Q. I wonder if you could undertake to  
4 provide us with an estimate of the typical net present  
5 value impact of having or not having Class 34?

6                   THE CHAIRMAN: I thought that was what  
7 was in the interrogatory.

8                   MR. SHEPHERD: That's internal rate of  
9 return, Mr. Chairman.

10                  MR. BROWN: Well, there's two ways to  
11 looking at a benefit, either a net present value or  
12 internal rate of return.

13                  MR. SHEPHERD: Q. Yes.

14                  MR. BROWN: A. We're providing you with  
15 internal rate of return. Is that not sufficient?

16                  Q. Let me put this to you another way.  
17 Is it correct to state that the value of Class 34, if  
18 it can be fully utilized, is approximately equivalent  
19 to a 30 per cent cash grant on the capital cost?

20                  A. That I can't answer.

21                  Q. Can you undertake to find that out?

22                  MR. SHEPHERD: If it's a problem to  
23 calculate that, I'm quite prepared to accept that, we  
24 can put it in our own exhibit and leave at that.

25                  I thought it was easy to calculate it; if

1 it's not...

2 MR. B. CAMPBELL: I make no comment about  
3 how easy or not easy it is. As I understand it, it has  
4 not been calculated, so short of asking -- if you're  
5 content to do it, that suits me fine. Thank you very  
6 much.

7 MR. SHEPHERD: All right.

8 Q. Okay, let's --

9 THE CHAIRMAN: Should Interrogatory  
10 5.14.216 be given a number?

11 MR. SHEPHERD: Oh yes.

12 THE REGISTRAR: With respect, Mr.  
13 Chairman, 321.1 was given to 5.14.64, then 5.14.64 came  
14 up just now and we gave it the number 321.11, so that  
15 should be negated and 321.11 should now be 5.14.216.

16 ---EXHIBIT NO. 321.11: Interrogatory No. 5.14.216.

17 THE CHAIRMAN: All right.

18 THE REGISTRAR: Thank you.

19 THE CHAIRMAN: Thank you, Mr. Lucas.

20 MR. SHEPHERD: Q. Mr. Vyrosto, could  
21 you turn in the 1990 NUG plan to Tables A3.7, .8 and  
22 .9, those are the foldouts at the back.

23 Maybe you could start with A3.8. Okay.  
24 Now, I understand that you've since filed a correction  
25 to this spread sheet; is that right?

1                   MR. VYROSTKO: A. That is correct.

2                   Q. What was wrong with it in the first  
3 place?

4                   MR. BROWN: A. In the years 2000 and the  
5 year 2005 the treatment of the capital investment was  
6 incorrect in the spread sheet formulas. 1995 was  
7 correct.

8                   Q. Okay. The year 2000, the effect of  
9 doing that was to overstate the rate of return; is that  
10 right?

11                  A. In the year 2000 case it did  
12 overstate it because it wrote off the capital twice.

13                  Q. Okay. It was an error in your  
14 treatment of Class 34, in effect; wasn't it?

15                  A. No, it wasn't. Just an error in  
16 developing the table.

17                  Q. Well now, correct me if I'm wrong,  
18 but I'm looking at this spread sheet and the first  
19 three lines under income before tax, you have a  
20 negative number. That's the mistake; right?

21                  A. Those are negative.

22                  Q. I'm sorry, I'm sorry, I'm looking at  
23 the tax line. You have a tax saving in those three  
24 years, that's a mistake; right?

25                  A. That's correct.

1                   Q. And so that's double counting the  
2 Class 34; isn't it?

3                   A. There's no Class 34 in that number.

4                   Q. It's just treating the capital cost  
5 as deductible?

6                   A. That's correct.

7                   Q. Okay. So the result was when you had  
8 return on equities of 25, 24, 23.5 per cent, those were  
9 way to high because you were getting too many tax  
10 benefits; right?

11                  A. That's correct.

12                  Q. Okay. You didn't know that at the  
13 time you published this?

14                  A. We did not observe that, no.

15                  Q. And then in the year 2005 one, which  
16 is A3.9, that's also been corrected, as I understand.  
17 What was the error there?

18                  A. We triple counted the capital cost.

19                  Q. You triple counted. Okay. And that  
20 resulted in a return on equity that was way too low;  
21 right?

22                  A. Well, this one the tax part of it was  
23 correct but the cash flow was incorrect.

24                  Q. That's right. It looks to me like in  
25 the first three years you have assumed that you paid

1       the capital cost twice; right?

2                  A. That's right.

3                  Q. Okay. And the result was that you  
4       badly understated the return on equity; right?

5                  A. For this particular one, yes.

6                  Q. Okay. And you didn't know that at  
7       the time you published this plan?

8                  A. We didn't pick it up, no.

9                  Q. Okay.

10                 THE CHAIRMAN: And I take it these  
11       numbers have been published somewhere else now and  
12       corrected?

13                 MR. BROWN: In Exhibit 143.

14                 THE CHAIRMAN: Thank you.

15                 MR. SHEPHERD: Q. Exhibit 143 corrects  
16       those spread sheets; is that right?

17                 MR. BROWN: A. Yes.

18                 Q. Now, I'm going to ask you to look at  
19       page 5 of the 1990 NUG plan. The last complete  
20       paragraph on that page, it says:

21                 "A spread sheet analysis ...", that's  
22       this one I assume?

23                 A. Yes.

24                 MR. B. CAMPBELL: I'm sorry, are we  
25       looking at the new version in Exhibit 143 of that

1 chapter or the old version in Exhibit --

2 THE CHAIRMAN: 83.

3 MR. B. CAMPBELL: 83?

4 MR. SHEPHERD: I'm looking at Exhibit 83.

5 MR. B. CAMPBELL: Okay, thank you.

6 MR. SHEPHERD: "A spread sleet analysis  
7 of the economic feasibility of a typical  
8 cogeneration project is outlined in  
9 Appendix 3. The analysis was conducted  
10 over pre-selected in-service years of  
11 1995, 2000 and 2005. The analysis  
12 indicated an increasing economic  
13 feasibility between the mid-1990s and the  
14 year 2000. After the year 2000 the  
15 growth of industrial cogeneration is  
16 expected to peak and then taper off due  
17 to the fact that the most attractive  
18 sites would already have been developed  
19 and that forecast gas prices outpace  
20 electricity prices over the forecast  
21 period. "

22 Now, that's based on these three spread  
23 sheets of which two of them are wrong; isn't that  
24 correct?

25 MR. BROWN: A. Yes.

1                   THE CHAIRMAN: In 143, I point out  
2 there's only been one word changed in the 143, the same  
3 paragraph.

4                   MR. SHEPHERD: Yes, I understand.

5                   THE CHAIRMAN: The word slightly has been  
6 inserted.

7                   "...analysis indicated a slightly  
8 increasing economic feasibility..."

9                   MR. SHEPHERD: Okay.

10                  Q. Do I read this right that you formed  
11 your conclusions on economic feasibility of typical  
12 cogen projects on the basis of these spread sheets?

13                  MR. BROWN: A. The 1990 plan was  
14 developed with those spread sheets.

15                  Q. And so you formed conclusions on the  
16 basis of those?

17                  A. The 1990 NUG plan.

18                  Q. Well, but they were wrong?

19                  A. I know that now.

20                  Q. Well then, doesn't that mean your  
21 conclusions are wrong?

22                  THE CHAIRMAN: They've changed their  
23 conclusions by inserting the word slightly.

24                  MR. SHEPHERD: Well, Mr. Chairman, that's  
25 not their conclusion, though, that's only their

1 explanation of the conclusion, it is their explanation  
2 of the data.

3 THE CHAIRMAN: Well --

4 MR. BROWN: The data in the revised  
5 spread sheets show essentially the same information,  
6 that's why we put the word slightly. Instead of going  
7 up to 25 per cent, it goes to a different number.

8 MR. SHEPHERD: Q. Okay. I'm going to  
9 ask you then to look at Interrogatory 5.14.161.

10 THE CHAIRMAN: Has it been marked?

11 MR. SHEPHERD: No, I don't believe so,  
12 Mr. Chairman.

13 THE CHAIRMAN: We would like a number for  
14 it?

15 [4:37 p.m.]

16 THE REGISTRAR: 321.12, Mr. Chairman.

17 ---EXHIBIT NO. 321.12: Interrogatory No. 5.14.161.

18 MR. SHEPHERD: Q. Now, this is telling  
19 us what the new internal rates of return are in those  
20 same spread sheets, isn't it, on the basis of corrected  
21 data; isn't that right?

22 MR. BROWN: A. Although it refers to  
23 Interrogatory 5.4.21, it was later changed to Exhibit  
24 143, so there is a slight error in that interrogatory.

25 Q. That is fine. So this looks like it

1       says the IRR is absolutely dead on from 1995 to 2000  
2       and it only drops slightly after that; isn't that what  
3       it says there?

4                   A. It does drop slightly after the year  
5       2000.

6                   Q. Okay. And it is dead on from 1995 to  
7       2000, right?

8                   A. Those look correct.

9                   Q. So you thought - tell me if this is  
10      correct - you thought when you do your projections that  
11      economic feasibility would increase between the  
12      mid-1990s and the year 2000 and then drop off?

13                  A. Yes.

14                  Q. Now you know that isn't true?

15                  A. It would still drop off after the  
16      year 2000.

17                  Q. But it doesn't increase in the  
18      initial period?

19                  A. From this information, it looks  
20      fairly steady.

21                  Q. And the drop-off is very slight,  
22      right?

23                  A. Yes.

24                  Q. And if I take your evidence  
25      correctly, the basis of your cogeneration projections

1 last year was these economic analyses, right?

2 A. In the '90 NUG plan, yes.

3 Q. So your '90 NUG plan numbers must be  
4 wrong; is that right?

5 A. That is why I issued an errata.

6 Q. Okay. But you didn't change your  
7 conclusions in your NUG plan?

8 A. Yes, I did.

9 Q. Sorry, you changed the cogeneration  
10 estimate in the 1990 NUG plan?

11 A. Oh, the year 2000 number did not  
12 change, so ...

13 Q. Okay. But you had a spread sheet in  
14 front of you that said that the return on equity was  
15 going to be 25 per cent and that is what you based your  
16 projections on, right, for the year 2000?

17 A. That is not correct.

18 Q. It is not, correct?

19 A. No.

20 Q. Well, did you base your projections  
21 on these three spread sheets that were in the 1990 NUG  
22 plan or not?

23 A. When we developed the forecast, we  
24 were looking for the steam capacity factor of a viable  
25 project. These are just samples that are in the NUG

1 plan of that analysis. And both analyses, with and  
2 without the change -- you have got to remember, there's  
3 other changes that we did as well in the errata. All  
4 of these indicated that the steam capacity factor of 70  
5 per cent was required.

6 Now, in the 1990 NUG plan, we said that;  
7 it just so happened when we redid it, it was just the  
8 same number.

9 Q. Just coincidental?

10 A. The two were done completely  
11 different.

12 Q. The 1991 NUG plan, will it also use  
13 spread sheet analysis to get to the cogeneration  
14 number?

15 A. Yes, it will, for industrial  
16 cogeneration.

17 Q. Now, you have testified, I think,  
18 that the internal rate of return on a project drops by  
19 3 to 5 per cent if it doesn't get Class 34, right?

20 A. That was in that interrogatory  
21 referred to earlier.

22 Q. Okay. And your spread sheets all  
23 assume full utilization of Class 34, correct?

24 A. They do.

25 Q. So is it fair to say that what we are

1 going to see in your new spread sheets - if you haven't  
2 done them, that is okay; you can say you don't know -  
3 is it fair to say that we will see that the loss of  
4 Class 34 benefits in some projects will be offset by  
5 the gas prices, lower gas prices in your new model?

6 A. The new model will be looking at  
7 high-efficiency cogeneration.

8 Q. So you will still assume Class 34?

9 A. Yes, I will.

10 Q. But with much lower gas prices?

11 A. I will be using the forecast shown on  
12 Exhibit 320.

13 Q. Well, now, I don't understand this.

14 This is page 17 of 320, right?

15 A. The one with the three gas forecasts.  
16 I have it in front of me.

17 Q. Now, I have been hearing you say that  
18 the reason why you have got so much more this year than  
19 you expected last year is because gas prices went down  
20 some 20 or 30 or 40 or whatever the percentage is, but  
21 that is not this, right?

22 A. That's correct.

23 Q. And that is why your forecast last  
24 year was wrong; is that correct? The real gas prices  
25 went down.

1                   A. The reason we have the extra 1,000  
2 was because gas has gone down.

3                   Q. Okay. But now for your new plan, you  
4 are going to use the forecast that doesn't consider  
5 that change; is that right?

6                   A. There is a change there. You can see  
7 the starting price is lower and it is lower up until  
8 the year 2001 and 2002.

9                   Q. Okay. But it is nothing like 20 or  
10 30 or 40 per cent, is it?

11                  A. That is correct.

12                  Q. But that is the forecast you are  
13 going to use to model economic viability?

14                  A. Yes.

15                  MR. SNELSON: A. Mr. Shepherd, that is  
16 the corporate forecast of gas prices as they will be in  
17 the future. And the witnesses who are most experienced  
18 in that area will be on Panel 8 to talk about the  
19 forecast of gas prices.

20                  Q. Well, I am not concerned with whether  
21 the forecast is correct or not, Mr. Snelson. All I am  
22 asking Mr. Brown is, is he going to use this or is he  
23 going to use what is affecting projects today?

24                  And I take it your answer is your going  
25 to use this?

1                   MR. BROWN: A. My forecast is a 25-year  
2 forecast, not what is happening today.

3                   Q. Okay.

4                   A. So in that regard, I used the  
5 long-term gas forecast.

6                   Q. I hesitate to ask this given the  
7 previous discussions on Class 34, but I will ask it  
8 anyway: Mr. Vyrostko, I don't know whether you have  
9 seen the line of questioning developed by counsel for  
10 AMPCO in Panel 2 dealing with the possibility that  
11 Class 34 would cause rapid turnover of projects; were  
12 you aware of that?

13                  MR. VYROSTKO: A. No, I am not.

14                  Q. Well, maybe you can turn up the  
15 transcript reference there - Volume 32, page 5598.

16                  MR. B. CAMPBELL: We are going to have to  
17 get it, if we could have a moment.

18                  MR. SHEPHERD: I think it is one of the  
19 ones we advised you of, Mr. Campbell.

20                  THE CHAIRMAN: Volume what, please?

21                  MR. B. CAMPBELL: Oh, if it is one on  
22 your list from yesterday, I think they will have it.

23                  THE CHAIRMAN: Volume what, please?

24                  MR. SHEPHERD: Volume 32, page 5598.

25                  THE CHAIRMAN: Thank you.

1                   MR. SHEPHERD: Q. If you start reading  
2 beginning at line 15, it is just a couple of lines.

3                   MR. SNELSON: A. I believe this was  
4 actually Panel 3 evidence and not Panel 2.

5                   Q. I am sorry, it is a typo in my  
6 questions here. I apologize.

7                   So, do you have that, Mr. Vyrosto?

8                   MR. VYROSTO: A. I do.

9                   Q. Do you understand what that was? Do  
10 you have any knowledge of whether it is correct to say  
11 that Class 34 promotes rapid turnover of NUG projects?

12                  A. No. I am not familiar with that.

13                  Q. You have never done any investigation  
14 to see whether that is true?

15                  A. No.

16                  Q. Okay. I told you I wasn't sure  
17 whether I should ask the question.

18                  Mr. Vyrosto, has Ontario Hydro taken any  
19 steps over the last five years that you are aware of to  
20 discuss the advantages and disadvantages of Class 34  
21 with the Federal Department of Finance?

22                  A. I believe we have had some  
23 discussions on Class 34, but I am not sure with who or  
24 by whom.

25                  Q. Are you aware of any specific

1 discussions between Ontario Hydro and the Department of  
2 Finance in the spring and summer of 1988 related to  
3 Class 34 financing techniques?

4 A. I am not familiar with that, no.

5 Q. Do you know whether such discussions  
6 took place?

7 A. I guess as I said, I understand that  
8 we have had discussions with respect to Class 34 with  
9 the federal government; when that happened, I am not  
10 sure about.

11 Q. I am going to ask you -- I am just  
12 not sure how to deal with this. I thought you would  
13 know, sorry -- can you undertake to determine whether  
14 Ontario Hydro in the spring and summer of 1988 had  
15 discussions with the Department of Finance and advised  
16 the Department of Finance that there would be billions  
17 of dollars of projects utilizing Class 34 in the  
18 upcoming couple of years? Can you undertake to  
19 determine whether that took place?

20 A. I can do that.

21 THE CHAIRMAN: Number?

22 THE REGISTRAR: It is 321.13 --

23 MRS. MORRISON: It is an undertaking.

24 THE REGISTRAR: Undertaking, sorry -

25 322.4.

1       ---UNDERTAKING NO. 322.4: Ontario Hydro undertakes to  
2           determine whether Ontario Hydro in the  
3           spring and summer of 1988 had discussions  
4           with the Department of Finance and  
5           advised the Department of Finance that  
6           there would be billions of dollars of  
7           projects utilizing Class 34 in the  
8           upcoming couple of years.  
9

10           MR. SHEPHERD: Q. There were some  
11           changes to the Class 34 rules in December of 1988, were  
12           there not?

13           MR. VYROSTKO: A. That's correct.

14           Q. And did they generally make Class 34  
15           less available to non-utility generators?

16           A. I believe they did.

17           MR. SHEPHERD: Okay. I just have one  
18           more thing, Mr. Chairman. I am going to file another  
19           exhibit, I think, if I can find it.

20           THE REGISTRAR: No. 325.

21       ---EXHIBIT NO. 325: Document Precis entitled, "Excerpt  
22           from the transcript of the Ontario Energy  
23           Board, HR 16, dated July 15, 1987.

24           MR. SHEPHERD: Q. I am going to ask you,  
25           Mr. Vyrosto, to read this through. Maybe you can  
start from about page 5126 at the bottom and just read  
those couple of pages.

26           Mr. Vyrosto, can you advise us who  
27           Hedley Palmer is and what his position was in 1987?

28           MR. VYROSTKO: A. Mr. Palmer is a

1       retired Hydro employee who was Director of Product  
2       Services, I believe, in 1987.

3                   Q. And isn't it true, Mr. Vyrosto, that  
4       Mr. Palmer was also the person at Ontario Hydro at that  
5       time in charge of non-utility generation?

6                   A. That's correct.

7                   Q. I am going to ask you to look on page  
8       5127 at line 11. Just to put this in context, Mr.  
9       Palmer was being asked why is parallel generation, as  
10      it was then called, in the marketing division or  
11      marketing branch.

12     [4:50 p.m.]

13                  At line 11 he said:

14                  "And there needed to be a group who,  
15                  I'll put the matter bluntly, that didn't  
16                  have a pack on its back and built in  
17                  biases against the addition of  
18                  independent generation on the system."

19                  Is it your recollection that that was  
20      true in 1987, that there were people who had packs on  
21      their back about independent generation?

22                  A. I don't know, I wasn't in the  
23      function at that time, so I can't answer that.

24                  Q. Okay. Mr. Palmer goes on to say, he  
25      is asked the question: "Are there areas of Hydro that

1 do have such biases?"

2 And his answer on line 17 is: "I think  
3 so."

4 Now, I guess I am just going to ask, is  
5 it true today that there are still people at Ontario  
6 Hydro who have packs on their backs and built in biases  
7 against independent generation?

8 A. I don't think so.

9 Q. So, the vice-president of the design  
10 and construction branch who might be out of a branch if  
11 independent power was too successful, he is still a  
12 supporter of independent power and other such options  
13 like demand management?

14 A. I believe he is.

15 Q. And everybody in his branch who might  
16 feel their jobs are threatened, they are supporters of  
17 independent generation as well?

18 A. I can't speak for some of those  
19 people in that organization because I am not familiar  
20 with them.

21 Q. Doesn't it concern you to know  
22 whether your organization is behind you?

23 A. The corporation is behind me.

24 Q. And is it your evidence that there is  
25 no significant resistance or biases against independent

1 generation in Ontario Hydro at the present time?

2                   A. I would think with the growth that we  
3 have shown through our forecast over the last two years  
4 and with this preliminary one now, I wouldn't suggest  
5 that there are any biases in the industry.

6                   Q. And no resistance, no significant  
7 resistance within the organization?

8                   A. I would suggest no significant  
9 resistance, yes.

10                  MR. SHEPHERD: Thank you.

11                  Mr. Chairman, I am planning to go on to a  
12 whole new area of projections, I wonder if, even though  
13 it's five to five, you might want to break now.

14                  THE CHAIRMAN: We will break now and come  
15 back tomorrow at ten o'clock. We are going to stop  
16 around four o'clock tomorrow afternoon.

17                  MR. SHEPHERD: Mr. Chairman, I should  
18 tell you, in case you are wondering, that I am  
19 presently directly on Schedule 4 Tuesday at the end of  
20 the day.

21                  THE CHAIRMAN: Thank you, Mr. Shepherd.

22                  THE REGISTRAR: This hearing will adjourn  
23 until ten o'clock tomorrow morning.

24

25

1        ---Whereupon the hearing was adjourned at 4:55 p.m., to  
2              be reconvened on the Thursday, October 3rd, 1991, at  
3              10:00 a.m.

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25        JAS/BD/JB [c. copyright 1985]



E R R A T A  
and  
C H A N G E S

To: Volume 67

Date: Tuesday, October 1, 1991.

Please note the following and make appropriate changes  
to your copy(ies) of the transcript.

Page v: Exhibit 321.3 should be "Interrogatory No.  
5.14.111."

Page v: Exhibit 531.4 should be "Interrogatory No.  
3.14.67."

Page 12090: Exhibit 321.5 should be "Interrogatory No.  
5.9.18."





